

BOBBY JINDAL
GOVERNOR



HAROLD LEGGETT, PH.D.
SECRETARY

State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Certified Mail No.:

Agency Interest No. 26003
Activity No.: PER20080006

Mr. Ralph Phillip
Valero Refining – New Orleans, LLC
Post Office Box 518
Norco, Louisiana 70079

RE: PSD-LA-619(M4), Permit Modification, St. Charles Refinery, Valero Refining – New Orleans, LLC, New Sarpy, St. Charles Parish, Louisiana

Dear Mr. Phillip:

Enclosed is the PSD permit modification for the Revised Scope Refinery Expansion Project. Construction of the proposed project is not allowed until such time as the corresponding operating permit or authorization to construct is issued. Should you have any questions concerning the permit, contact Dan Nguyen at 225-219-3075.

Sincerely,

Cheryl Sonnier Nolan
Assistant Secretary

Date

CSN: DCN

c: US EPA Region 6

PSD-LA-619(M4)
AI No. 26003

**AUTHORIZATION TO CONSTRUCT AND OPERATE A NEW OR MODIFIED
FACILITY PURSUANT TO THE PREVENTION OF SIGNIFICANT DETERIORATION
REGULATIONS IN LOUISIANA ENVIRONMENTAL REGULATORY CODE,
LAC 33:III.509**

In accordance with the provisions of the Louisiana Environmental Regulatory Code, LAC 33:III.509,

Valero Refining – New Orleans, LLC
Post Office Box 518
Norco, Louisiana 70079

is authorized to construct and operate the Revised Scope Refinery Expansion Project at St. Charles Refinery near

New Sarpy
St. Charles Parish, Louisiana

subject to the emissions limitations, monitoring requirements and other conditions set forth hereinafter.

This permit and authorization to construct shall expire at midnight on _____, 2010, unless physical on site construction has begun by such date, or binding agreements or contractual obligations to undertake a program of construction of the source are entered into by such date.

Signed this _____ day of _____, 2008.

Cheryl Sonnier Nolan
Assistant Secretary
Office of Environmental Services

BRIEFING SHEET

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)**

PURPOSE

To obtain a PSD permit modification for the Revised Scope Refinery Expansion Project.

RECOMMENDATION

Approval of the proposed permit modification.

REVIEWING AGENCY

Louisiana Department of Environmental Quality, Office of Environmental Services, Air Permits Division

PROJECT DESCRIPTION

St. Charles Refinery is an integrated petroleum refinery which refines heavy, sour crude oil to gasoline, distillates, petrochemicals, sulfur, and petroleum coke. The crude feed stock is typically brought in via ship and the products are moved via barge and pipeline.

On February 8, 2007, Permit PSD-LA-619(M2) and 2520-00027-V4 were issued authorizing Valero Refining – New Orleans, LLC (Valero) to implement the Refinery Expansion Project which increases the St. Charles Refinery production capacity from 220,000 bbls/day to 380,000 bbls/day by installing new processing units and modifying existing production units.

Valero proposes to significantly revise the scope of the Refinery Expansion Project. The revised project is known as the Revised Scope Refinery Expansion Project. Valero has revised the planned refinery expansion in conjunction with Valero's business plan for compliance with 40 CFR 80.1220, the federal Mobil Source Air Toxics (MSAT) II regulations, primarily to reflect the addition of a much larger Aromatic Recovery Unit than previously permitted. Under the Revised Scope Refinery Expansion Project, several sources previously permitted will not be constructed. The Revised Scope Refinery Expansion Project will cause significant PM/PM₁₀, SO₂, NO_x, CO, VOC, H₂S, and H₂SO₄ emissions increases. Emissions reductions from several projects do not provide enough credit to net any criteria pollutants out of the PSD requirements. PSD analyses are required for these pollutants. BACT analysis is required for all new and affected modified equipment. However, BACT determinations for emissions from affected equipment which was included in PSD Permit PSD-LA-619(M2) and that the equipment will not be changed due to the Revised Scope Refinery Expansion Project are still valid. There are no H₂S or H₂SO₄ emissions increases from the newly proposed or modified equipment (due to the revised project); therefore, PSD analyses are not required for H₂S and H₂SO₄. The following table lists emissions from the Revised Scope Refinery Expansion Project in tons per year:

BRIEFING SHEET

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)**

Pollutant	Baseline Emissions	Proposed Emissions	Actual-to Projected Actual	Contemporaneous Changes	Net Emissions Changes	PSD Analysis Required?
PM/PM ₁₀	19.87	893.54	873.67	+ 46.03	+ 919.70	Yes
SO ₂	475.29	2274.59	1799.30	+ 226.21	+ 2025.51	Yes
NO _x	209.81	1883.99	1674.18	+ 255.31	+ 1929.48	Yes
CO	205.90	4657.46	4451.56	+ 685.37	+ 5136.93	Yes
VOC	324.08	2239.04	1914.96	+ 14.12	+ 1929.08	Yes
H ₂ S	57.12	82.14	25.02	0	+ 25.02	Yes
H ₂ SO ₄	11.55	23.10	11.52	0	+ 11.52	Yes

Valero also proposes to convert the existing Millisecond Catalytic Cracking Unit (MSCCU) to a conventional Fluidized Catalytic Cracking Unit (FCCU) under the MSCCU Revamp Project. The conversion is to improve the reliability of the unit, increase in run time, reduce catalyst losses, reduce particulate emissions, increase gasoline yield from the cat cracker by 3000 barrels per day. The MSCCU Revamp Project is implemented along with but is independent from the Revised Scope Expansion Project. The PSD applicability analyses were conducted separately. The test showed that the MSCCU Revamp Project will not cause any significant emissions increases. Neither netting analysis nor PSD analysis is required for the MSCCU Revamp Project. However, PM₁₀ and SO₂ emissions increases are more than 50 % of their respective significance levels, then there is a reasonable possibility that the project will cause significant emissions increases. Pre-project and post-project monitoring, record keeping, and reporting are required.

TYPE OF REVIEW

PM/PM₁₀, SO₂, NO_x, CO, VOC, H₂S, and H₂SO₄ emissions from the refinery expansion project increase above the PSD significance levels. These pollutants were reviewed under the PSD regulations.

BEST AVAILABLE CONTROL TECHNOLOGY

PM/PM₁₀, SO₂, NO_x, CO, VOC, H₂S, and H₂SO₄ emissions from the affected equipment, such as, heaters, boilers, thermal oxidizers, catalyst cracking units, flares, tanks, loadings, wastewater, fugitives, and other associated equipment are controlled by BACT.

AIR QUALITY IMPACT ANALYSIS

Screen dispersion modeling indicated that CO emissions from the proposed project will be below the PSD significant impact level. Refined modeling for CO was not required. Refined modeling for PM₁₀, NO₂, and SO₂ indicated that emissions of these pollutants from the proposed project

BRIEFING SHEET

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)**

will not cause or contribute to any National Ambient Air Quality Standards (NAAQS) exceedances. The computer models also indicated that the allowable increments for PM₁₀, SO₂, and NO₂ will be preserved.

ADDITIONAL IMPACTS

Soils, vegetation, and visibility will not be adversely impacted by the proposed project, nor will any Class I area be affected. The project will not result in any significant secondary growth effects.

PROCESSING TIME

Application Dated:	March 20, 2008
Additional Information Dated:	May 16, June 16, July 15, 2008
Effective Completeness:	July 18, 2008

PUBLIC NOTICE

A notice requesting public comment on the proposed permit was published in *The Advocate*, Baton Rouge, LA and in the *St. Charles Herald Guide*, Boutte, LA on XXX, 2008. The notice was also mailed to individuals and organizations on the mailing list of the facility and published in the Office of Environmental Services Public Notice Mailing List. The permit application, the proposed permit, and the Statement of Basis were submitted to the Norco Branch - St. Charles Parish Library on XXX, 2008. The proposed permit and the Statement of Basis were submitted to United States Environmental Protection Agency (US EPA) Region 6. All comments will be considered prior to a permit decision.

PRELIMINARY DETERMINATION SUMMARY

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008**

I. APPLICANT

Valero Refining – New Orleans, LLC
Post Office Box 518
Norco, Louisiana 70079

II. LOCATION

St. Charles Refinery is located at 14902 River Road, Norco, Louisiana 70079. Approximate UTM coordinates are 751.9 kilometers East and 3319.9 kilometers North, Zone 15.

III. PROJECT DESCRIPTION

St. Charles Refinery refines heavy, sour crude oil to produce gasoline, distillates (kerosene, naphtha, diesel, etc.), petrochemicals, sulfur, and petroleum coke. The crude feed stock is typically brought in via ship and the products are moved via barge or pipeline.

The refinery is divided into the West Plant, East Plant, and Tank Farm. The West Plant consists of the following units: Crude Unit No. 2, Vacuum Unit, Diesel Hydrotreater, Kerosene Hydrotreater, Light Straight Run Hydrotreater, Naphtha Hydrotreater, Heavy Cat Naphtha Hydrotreater, Continuous Catalytic Reformer, and Delayed Coker.

The East Plant consists of the following units: Fluid Catalytic Cracking Unit, Alkylation Unit, Utilities Unit (boilers, cooling towers, wastewater treatment unit, reverse osmosis unit, and river water clarification unit), Sulfur Recovery Units, Ultra Low Sulfur Diesel (ULSD) Unit, Liquefied Petroleum Gas (LPG) Storage and Processing, Steam Methane Reformer (SMR), and a gasoline desulfurization unit (GDU).

The Tank Farm includes the East Plant Tank Farm, West Plant Tank Farm, New Sarpy Tank Farm, Section I Tank Farm, Section II Tank Farm, Section III Tank Farm, Product Loading and Unloading Docks.

On February 8, 2007, Permit PSD-LA-619(M2) and 2520-00027-V4 were issued authorizing Valero Refining – New Orleans, LLC (Valero) to implement the Refinery Expansion Project to increase the St. Charles Refinery production capacity from 220,000 bbls/day to 380,000 bbls/day by installing new processing units and modifying existing production units. The permits were then amended and modified.

Valero proposes to significantly revise the scope of the Refinery Expansion Project. The revised project is known as the Revised Scope Refinery Expansion Project. Valero has revised the planned refinery expansion in conjunction with Valero's business plan for compliance with 40 CFR 80.1220, the federal Mobil Source Air Toxics (MSAT) II regulations, which requires Valero to significantly reduce benzene concentration in gasoline by December 31, 2010. Reducing benzene from gasoline will increase the

PRELIMINARY DETERMINATION SUMMARY

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008

aromatic production. Valero proposes to increase the size of the permitted Aromatic Recovery Unit (ARU). The ARU will consist of a Sulfolane Extraction Unit, a Tatoray Process Unit, and two Paraxylene Units. Other changes include modification to the existing continuous reformer area (CCR) and installation of a new CRU, which will be collocated with the new ARU, and supporting facilities. While the CRU/CCR is a traditional refinery process unit, the ARU is a SOCMI unit, thus the two units will be treated as distinct for regulatory applicability purposes.

Firing rate of Heater 94-GDU and capacities of cooling towers will also be increased. New process drains will be added. Instead of constructing six heaters at the Hydrocracker Unit (HCU) as permitted, Valero will install only three units under a cap. Several sources previously permitted will not be constructed. In addition, this permit modification also includes the MSCCU Revamp Project and includes multiple permit reconciliation items.

Other unrelated changes include revising the facility tank farm and its cap, consolidating emissions from wastewater into a single emission point (WWTU), and installing an additional thermal oxidizer for the SRU service.

Valero submitted a PSD analysis for the original Refinery Expansion Project in 2005. PSD Permit PSD-LA-619(M2) was issued on February 8, 2007 and was modified on July 17, 2007, for the expansion project. To implement the Revised Scope Refinery Expansion Project, Valero submitted a revised PSD analysis, date March 20, 2008, to incorporate 1) modified existing equipment, 2) modified permitted (but not constructed) equipment, 3) and newly proposed equipment. To perform the actual-to-projected-actual applicability test, Valero used actual emissions from the affected equipment during the 2003 and 2004 calendar years as baseline. The test indicated that the project will cause significant PM/PM₁₀, SO₂, NO_x, CO, VOC, H₂S, and H₂SO₄ emissions increases. Netting analyses are required for these pollutants. The contemporaneous period will be from the first quarter of 2002 (five years prior to the commencement of construction of first quarter of 2007) to the initial startup which is expected to be the first quarter of 2010. The netting analyses show that the project will cause significant net PM/PM₁₀, SO₂, NO_x, CO, VOC, H₂S, and H₂SO₄ emissions increases. According to LAC 33:III.509A.4.b, PSD analyses are required for these pollutants. The following table lists emissions from the Revised Scope Refinery Expansion Project in tons per year:

Pollutant	Baseline Emissions	Proposed Emissions	Actual-to Projected Actual	Contemporaneous Changes	Net Emissions Changes	PSD Analysis Required?
PM/PM ₁₀	19.87	893.54	873.67	+ 46.03	+ 919.70	Yes
SO ₂	475.29	2274.59	1799.30	+ 226.21	+ 2025.51	Yes
NO _x	209.81	1883.99	1674.18	+ 255.31	+ 1929.48	Yes
CO	205.90	4657.46	4451.56	+ 685.37	+ 5136.93	Yes
VOC	324.08	2239.04	1914.96	+ 14.12	+ 1929.08	Yes

PRELIMINARY DETERMINATION SUMMARY

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008

Pollutant	Baseline Emissions	Proposed Emissions	Actual-to-Projected Actual	Contemporaneous Changes	Net Emissions Changes	PSD Analysis Required?
H ₂ S	57.12	82.14	25.02	0	+ 25.02	Yes
H ₂ SO ₄	11.55	23.10	11.52	0	+ 11.52	Yes

BACT analysis is required for all new and affected modified equipment. However, BACT determinations for emissions from affected equipment which was included in PSD Permit PSD-LA-619(M2) and that the equipment will not be changed due to the Revised Scope Refinery Expansion Project are still valid. There are no H₂S or H₂SO₄ emissions increases from the newly proposed or modified equipment (due to the revised project); therefore, PSD analyses are not required for H₂S and H₂SO₄.

Valero also proposes to convert the existing Millisecond Catalytic Cracking Unit (MSCCU) to a conventional Fluidized Catalytic Cracking Unit (FCCU) under the MSCCU Revamp Project. The conversion is expected to improve the reliability of the unit, thereby reducing unplanned outages with an anticipated corresponding increase in run time of approximately 516 hours/year. The conversion also reduces catalyst losses, thereby, reducing particulate emissions. There is no increase in feed rate or increase in capacity. However, the revamp project is expected to allow a shift in yield, resulting in a potential increase in gasoline yield from the cat cracker by 3000 barrels per day. The MSCCU Revamp Project is implemented along with but is independent from the Revised Scope Expansion Project. The PSD applicability analyses were conducted separately.

Emissions from the existing MSCCU and other affected equipment were reviewed under PSD regulations and documented in Permit PSD-LA-619(M2). The MSCCU Revamp Project is considered independent from the Revised Scope Refinery Expansion Project.

The MSCCU Revamp Project will cause PM/PM₁₀, SO₂, NO_x, CO, VOC and H₂SO₄ emissions to increase. Valero performed the actual-to-projected-actual applicability test for emissions from the MSCCU Revamp Project and any downstream effects of the 3000 barrel per day gasoline yield increase. Average emissions from the 2005 and 2006 calendar years were used as baseline. The test showed that the MSCCU Revamp Project will not cause any significant emissions increases. Neither netting analysis nor PSD analysis is required for the MSCCU Revamp Project. However, PM₁₀ and SO₂ emissions increases are more than 50% of their respective significance levels, then there is a reasonable possibility that the project will cause significant emissions increases. Pre-project and post-project monitoring, record keeping, and reporting are required. Emissions from the MSCCU Revamp Project affected equipment are quantified in the following table and incorporated in Permit PSD-LA-619(M4).

PRELIMINARY DETERMINATION SUMMARY

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008**

Pollutant	Baseline Emissions	Proposed Emissions	Actual-to-Projected-Actual	Demand Growth Exclusion	Net Emissions Changes	PSD Analysis Required?
PM/PM ₁₀	230.39	289.34	+ 58.95	48.51	+ 10.44	No
SO ₂	236.03	1571.84	+ 1335.81	1314.40	+ 21.41	No
NO _x	339.82	427.58	+ 87.76	119.92	- 32.16	No
CO	491.30	675.00	+ 183.70	175.11	+ 8.59	No
VOC	304.24	1229.68	+ 925.44	907.51	+ 17.93	No
H ₂ SO ₄	3.10	11.54	+ 8.44	7.76	+ 0.68	No

This permit (PSD-LA-619(M4)) also includes provisions of Permit PSD-LA-571(M1) which has been incorporated into Permit PSD-LA-619(M2).

IV. SOURCE IMPACT ANALYSIS

A proposed net increase in the emission rate of a regulated pollutant above de minimis levels for new major or modified major stationary sources requires review under Prevention of Significant Deterioration regulations, LAC 33:III.509. PSD review entails the following analyses:

- A. A determination of the Best Available Control Technology (BACT);
- B. An analysis of the existing air quality and a determination of whether or not preconstruction or postconstruction monitoring will be required;
- C. An analysis of the source's impact on total air quality to ensure compliance with the National Ambient Air Quality Standards (NAAQS);
- D. An analysis of the PSD increment consumption;
- E. An analysis of the source related growth impacts;
- F. An analysis of source related growth impacts on soils, vegetation, and visibility;
- G. A Class I Area impact analysis; and
- H. Toxic impacts

A. BEST AVAILABLE CONTROL TECHNOLOGY

Under current PSD regulations, an analysis of "top down" BACT is required for the control of each regulated pollutant emitted from a modified major source in excess of the specified significant emission rates. The top down approach to the BACT process involves determining the most stringent control technique available for a similar or identical source. If it can be shown that this level of control is infeasible based on technical, environmental, energy, and/or cost considerations, then it is rejected and the next most stringent level of control is determined and similarly evaluated. This process

PRELIMINARY DETERMINATION SUMMARY

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008

continues until a control level is arrived at which cannot be eliminated for any technical, environmental, or economic reason. A technically feasible control strategy is one that has been demonstrated to function efficiently on identical or similar processes.

Valero proposes to implement the Revised Scope Refinery Expansion Project to increase the St. Charles Refinery's capacity from 220,000 bbls/day to 380,000 bbls/day and to meet the MSAT II regulations by modifying existing production units and installing new processing units. PM/PM₁₀, SO₂, NO_X, CO, VOC, H₂S, and H₂SO₄ emissions will increase above the PSD significance levels. These pollutants will be reviewed under the PSD regulations. BACT analyses are required for these pollutants.

BACT analysis for NO_X emissions from boilers and heaters

Selective catalytic reduction (SCR) is the most effective post-combustion NO_X control method analyzed. In the process, a reducing agent is introduced into the flue gas upstream of a catalyst bed which is maintained at elevated temperature. An SCR can reduce NO_X emissions by 80% - 90% or maintain NO_X emissions at or below 0.015 lbs/MM BTU using ammonia as the reducing agent. However, ammonia emissions are a negative side effect of the technology. Implementing SCR would require substantial capital expenditures and additional energy to keep the catalyst bed at high temperatures. Beside the high costs related to the construction and operation, the SCR also has some safety concerns, technical difficulties, and negative environmental impacts associated with catalyst handling and disposal.

Selective noncatalytic reduction (SNCR) is a post-combustion process in which a reagent mixture is injected into the elevated temperature flue gas stream. Using urea solution as reagent, the process can reduce 85% of NO_X into nitrogen, water, and carbon dioxide. The process may release ammonia during the incomplete decomposition of urea. Additional energy is required to increase flue gas temperatures to process conditions.

Staged combustion (low NO_X) burners (LNB) are designed for distributed air flow and minimal flame length to optimize furnace conditions and minimize NO_X levels. The amount of NO_X formed during combustion is influenced by time, temperature, and oxygen concentration. Low NO_X burners minimize NO_X formation by lowering flame temperatures through staged fuel and combustion air. The technology can be improved by combining with other techniques, such as flue gas recirculation. The Ultra LNB (ULNB) can reduce NO_X emissions to 0.03 lbs/MM BTU or less. The technology is reliable, low capital and operating costs. No additional energy is required.

In the flue gas recirculation (FGR) technique, the air/natural gas mixture fed to the boilers/heaters is diluted with hot flue gas to reduce NO_X emissions by lowering flame temperature and suppressing oxygen partial pressure. Flue gases are recirculated either with an external or an internal design. To maximize the NO_X reduction, the FGR technique can be combined with other options, such as LNB+FGR, SCR+LNB+FGR, and SNCR+LNB+FGR.

PRELIMINARY DETERMINATION SUMMARY

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008**

A comparison of the control strategies listed above indicates that for controlling NO_x emissions from the affected boilers and heaters, the highest control efficiency is the combination of SCR and ULNB. The cost effectiveness of this combination ranged from \$3,748/ton to \$14,842/ton. The incremental cost effectiveness for this option over ULNB is between \$21,118/ton and \$40,550/ton. Details of BACT cost analysis are listed in Table I. By adding an SCR on a boiler or a heater which is already equipped with an ULNB, NO_x emissions will decrease by an extra 16%. The safety concerns, technical difficulties, negative environmental impacts, and high incremental cost effectiveness, associated with the SCR outweighed the gained benefits. Therefore, the SCR is rejected as a viable control technology.

The next control option is the combination of SNCR and ULNB. This combination has never been used in industry and there is no information available to demonstrate that the theoretical NO_x emissions level can be achieved. SNCR in combination with ULNB is not considered technically feasible and was rejected as BACT for the control of NO_x emissions from the proposed boilers and heaters.

SCR can be used as an add-on control without the installation of the ULNB. Because of high capital costs, the cost effectiveness ranges from \$4,556/ton to \$15,905/ton. The incremental cost effectiveness for this option (above ULNB) is between \$35,449/ton and \$51,013/ton. Because of the safety concerns, technical difficulties, negative environmental impacts, and high incremental cost effectiveness, the SCR is rejected as a viable control technology.

Valero proposed ULNB as BACT for NO_x emissions from all proposed boilers and heaters. The ULNB will limit NO_x emissions to 0.03 lbs/MM BTU from the proposed heaters and boilers. Valero will utilize waste heat from flue gases of combustion devices to heat the combustion air prior to mixing it with fuels. This practice will recover a significant amount of waste heat from flue gases of combustion sources, therefore, increase the efficiencies of the boilers and heaters, and then as a consequence, reduce amount of combusted fuel and then reduce emissions. However, with this practice, the LNB will limit NO_x emissions to 0.04 lbs/MM BTU. ULNB were determined as BACT to limit NO_x emissions from the proposed heaters and boilers to 0.03 lbs/MM BTU, or to 0.04 lbs/MM BTU when the combustion air is preheated.

BACT analysis for CO emissions from boilers and heaters

Thermal oxidation is the first control option considered for CO emissions. Flue gases from combustion equipment could be routed through a thermal oxidizer where the gases will be heated to an operating range of 1200 - 2000°F. At this temperature, carbon monoxide and VOC will be burned to carbon dioxide. Raising exit gas to the appropriate temperature range will require a significant amount of energy and generate a large quantity of secondary emissions.

PRELIMINARY DETERMINATION SUMMARY

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008**

Catalytic combustion of carbon monoxide is another control option. Flue gas can be burned in a catalyst bed at 650 - 800°F. Approximately 90 percent of the carbon monoxide would be converted to carbon dioxide. Additional energy is required to maintain flue gas at an appropriate temperature and send it through the catalyst bed. The catalyst bed, containing heavy metals, requires periodic replacement and recycling and/or disposal. Particulates and sulfur dioxide may plug or poison the catalyst beds.

Heaters and boilers can be considered as thermal oxidizers themselves, adding another thermal oxidizer downstream of a heater or boiler to control CO is impractical and is rejected as BACT. Catalytic combustion is rarely used to control CO emissions from natural gas or fuel gas-fired boilers and heaters. Catalytic combustion will maintain CO emissions at or below 0.08 lbs/MM BTU.

The boilers and heaters will be fueled by natural gas or process fuel gas which is subject to 40 CFR 60 Subparts NNN and RRR. Therefore, the boilers and heaters are subject to these standards. Complying with 40 CFR 60 Subparts NNN and RRR to ensure complete combustion also minimizes CO emissions. Comply with 40 CFR 60 Subparts NNN and RRR to limit CO emissions from all affected boilers and heaters to 0.08 lbs/MM BTU is determined as BACT for CO.

BACT analysis for PM/PM₁₀ emissions from boilers and heaters

Control techniques for PM/PM₁₀ include cyclones, electrostatic precipitators (ESP), fabric filters, wet scrubbers, good combustion practices, and use of gaseous fuels.

Cyclones collect particulate laden gases and force them to spin in a vortex resulting in a change in direction of the particles. The particles then drop out of the gas stream. Cyclones are generally used to reduce dust loading and collect large particles.

ESPs operate by electrically charging particles and then separating them from the gas stream with a collector of opposite charge. High voltage direct current discharge electrodes, typically wires, are suspended in the gas stream to impose a negative charge on the particles. The particles are driven to positive collecting electrodes (typically plates) located opposite the wires. Particles are removed from the collection plates by rapping devices that strike the collection and discharge electrodes. The dust falls into hoppers and is conveyed to a disposal system. ESPs are usually used to capture coarse particles at high concentrations. Small particles at low concentrations are not effectively collected by an ESP.

In the fabric filter or baghouse, particle-laden gas passes through the filter bags, retaining particles on the filters. The filters are periodically cleaned via shaking, reverse airflow, or pulse jet cleaning. During cleaning, particles are deposited in a hopper for subsequent disposal. Fabric filters are used for medium and low gas flow streams with high particulate concentrations.

PRELIMINARY DETERMINATION SUMMARY

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008

PM/PM₁₀ can be removed from a vent stream using a wet scrubber. Vent gas usually flows countercurrently with water, which removes particulate from the gas. Particulates are then separated from water and then disposed.

Depending on the design, cyclones, ESPs, fabric filters, and wet scrubbers can achieve similar removal efficiencies. These techniques are not effective with streams containing a low concentration of small particulates, such as emissions from natural gas and fuel gas-fired boilers and heaters. PM/PM₁₀ concentrations in the natural gas and fuel gas-fired boilers and heaters are even less than the concentrations guaranteed by the cyclones, ESPs, fabric filters, and wet scrubbers. Therefore, cyclones, ESPs, fabric filters, and wet scrubbers are rejected as BACT for PM/PM₁₀ emissions from heaters and boilers.

The boilers and heaters will be fueled by natural gas or process fuel gas which is subject to 40 CFR 60 Subparts NNN and RRR. Therefore, the boilers and heaters are subject to these standards. Complying with 40 CFR 60 Subparts NNN and RRR to ensure complete combustion also minimizes PM/PM₁₀ emissions. Comply with 40 CFR 60 Subparts NNN and RRR is determined as BACT for PM/PM₁₀.

BACT analysis for VOC emissions from boilers and heaters

VOC emissions can be controlled by various means, including regenerative thermal oxidizers (RTO), regenerative catalytic oxidizers (RCO), absorption and adsorption processes, and biofiltration. These control techniques are only effective for streams with high VOC concentrations. Therefore, regenerative thermal oxidizers (RTO), regenerative catalytic oxidizers (RCO), absorption and adsorption processes, and biofiltration are rejected as BACT for VOC emissions from natural gas and fuel gas-fired boilers and heaters.

The boilers and heaters will be fueled by natural gas or process fuel gas which is subject to 40 CFR 60 Subparts NNN and RRR. Therefore, the boilers and heaters are subject to these standards. Complying with these standards is determined as BACT for VOC.

BACT analysis for SO₂ emissions from boilers and heaters

The most effective way to control SO₂ emissions from boilers and heaters is preventing the formation of SO₂ using low sulfur fuels. Valero proposed to use pipeline quality natural gas and/or refinery fuel gases with hydrogen sulfide concentration less than or equal to 100 ppmv on an annual average and/or process fuel gases with hydrogen sulfide concentration less than or equal to 10 ppmv on an annual average as fuels in all affected boilers and heaters. This is determined as BACT.

BACT analysis for emissions from the proposed Thermal Oxidizers No. 5, 6, 7

Valero proposed to construct the Thermal Oxidizers No. 5, 6, and 7 to control VOC emissions from some proposed storage tanks, which will be subject to either 40 CFR 60

PRELIMINARY DETERMINATION SUMMARY

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING - NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008**

Subpart Kb and/or 40 CFR 63 Subparts G. To comply with these regulations, the tanks are equipped with internal floating roofs. Vents from the tanks are then burned at the thermal oxidizers. PM/PM₁₀, NO_x, CO, and VOC emissions are generated as products of combustion or incomplete combustion from the thermal oxidizer. The thermal oxidizer is also the most efficient method to control CO and VOC emissions. Adding a control device on top of another control device is not practical. Proper design and operation, good combustion practices and gaseous fuels are determined as BACT for PM/PM₁₀, NO_x, CO, and VOC emissions.

The most effective way to control SO₂ emissions from the thermal oxidizers is preventing the formation of SO₂ using low sulfur fuels. Valero proposed to use pipeline quality natural gas and/or process fuel gases with H₂S less than or equal to 10 ppmv on an annual average as fuels at the thermal oxidizers. This is determined as BACT.

BACT analysis for emissions from the proposed API Separator, the Dissolved Gas Flotation, and the Thermal Oxidizer No. 8

The Thermal Oxidizer No. 8 will be installed to destroy VOC from the API Separator and the Dissolved Gas Flotation at the wastewater treatment system. VOC emissions from the API Separator and the Dissolved Gas Flotation are subject to 40 CFR 61 Subpart FF. To comply with this standard, VOC emissions from the API Separator and the Dissolved Gas Flotation will be destroyed at the Thermal Oxidizer No. 8. Therefore, the Thermal Oxidizer No. 8 will subject to 40 CFR 61 Subpart FF. Compliance with 40 CFR 61 Subpart FF standards is determined as BACT for VOC emissions from the API Separator, the Dissolved Gas Flotation, and the Thermal Oxidizer No. 8.

During the combustion process at the thermal oxidizer, PM/PM₁₀, SO₂, NO_x, and CO will be formed and emitted. The thermal oxidizer is also the most efficient method to control CO emissions. Constructing a control device on top of another control device is not practical. Proper design and operation, good combustion practices and gaseous fuels are determined as BACT for PM/PM₁₀, NO_x, CO, and VOC emissions.

The most effective way to control SO₂ emissions from the Thermal Oxidizer No. 8 is to prevent the formation of SO₂ using low sulfur fuels. Valero proposed to use pipeline quality natural gas or process fuel gases with H₂S less than or equal to 100 ppmv on an annual average as fuels. This is determined as BACT.

BACT analysis for emissions from the proposed ARU Marine Loading and the MVR Thermal Oxidizer No. 2

VOC emissions from ARU marine loading are subject to LAC 33:III.2108 and 40 CFR 61 Subpart BB. To control VOC emissions as required by these regulations, a second thermal oxidizer will be built. Routing VOC emissions from the ARU marine loading to the thermal oxidizer that meets requirements of 40 CFR 61 Subpart BB is determined as BACT for VOC emissions from ARU Marine Loading. Complying with 40 CFR 61

PRELIMINARY DETERMINATION SUMMARY

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008

Subpart BB is also determined as BACT for VOC emissions from the MVR thermal oxidizer No. 2. Fugitive VOC emissions from the marine loading dock will be controlled by a leak detection and repair (LDAR) program that meet requirements of 40 CFR 61 Subpart V. This LDAR is determined as BACT for fugitive emissions from the ARU marine loading.

PM/PM₁₀, SO₂, NO_x and CO will also be emitted from the MVR thermal oxidizer as products of combustion. The thermal oxidizer is also the most efficient method to control CO emissions. Constructing a control device on top of another control device is not practical. Proper design and operation, good combustion practices and gaseous fuels are determined as BACT for PM/PM₁₀, NO_x, CO, and VOC emissions.

The most effective way to control SO₂ emissions from the MVR thermal oxidizer is preventing the formation of SO₂ using low sulfur fuels. Valero proposed to use pipeline quality natural gas and/or process fuel gases with H₂S less than or equal to 10 ppmv as fuels at the MVR thermal oxidizer. This is determined as BACT.

BACT analysis for emissions from the ARU Flare

The ARU Flare will be installed to destroy VOC from emergency situations. Because the flare is fueled by process fuel gas which is subject to 40 CFR 60 Subparts NNN and RRR, the flare must comply with these subparts by complying with 40 CFR 60 Subpart A. Complying with 40 CFR 60 Subpart A is determined as BACT for VOC emissions from the flare. During the combustion process at the flare, PM/PM₁₀, SO₂, NO_x, and CO will be formed and emitted. Complying with 40 CFR 60 Subpart A to ensure complete combustion also minimizes PM/PM₁₀, NO_x, and CO emissions from the flare. Comply with 40 CFR 60 Subpart A is determined as BACT for PM/PM₁₀, NO_x, and CO.

The most effective way to control SO₂ emissions from the ARU Flare is to prevent the formation of SO₂ using low sulfur fuels. Valero proposed to use pipeline quality natural gas or process fuel gases with H₂S less than or equal to 10 ppmv as fuels at the flare tip. This is determined as BACT.

BACT analysis for VOC emissions from cooling towers

Small quantities of VOC from the process side of the heat exchangers may be leaked to the cooling water side of the heat exchangers and then released to the atmosphere from the cooling towers. Conducting a monitoring program is the only effective option to minimize VOC emissions and is determined as BACT for VOC emissions from the cooling towers. For the cooling tower at the ARU, a monitoring program meets requirements of 40 CFR 63 Subpart F is determined as BACT.

PRELIMINARY DETERMINATION SUMMARY

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008**

BACT analysis for PM/PM₁₀ emissions from cooling towers

A small amount of water will be entrained and carried over with exit air from the towers. Suspended solids and dissolved materials in the entrained water are emitted as particulates. The cooling towers will be designed with integrated drift eliminators to minimize drift loss. This is the only control option for PM/PM₁₀. Drift eliminators are determined as BACT for PM/PM₁₀ emissions from the cooling towers.

BACT analysis for VOC emissions from fugitive components

The only option to control VOC emissions from fugitive equipment is conducting a leak detection and repair (LDAR) program to prevent and promptly repair any VOC leaks. The St. Charles Refinery's current LDAR program meets all requirements of the LA Refinery MACT. Valero proposed to include the proposed components into the existing LDAR for the refinery. Fugitive component at the proposed ARU will comply with 40 CFR 63 Subpart H. Conducting an LDAR program that meets requirements of 40 CFR 63 Subpart H is determined as BACT for fugitive VOC emissions from the proposed ARU. Conducting a LDAR program that meets requirements of LA Refinery MACT is determined as BACT for fugitive VOC emissions from the affected components, other than those at the ARU.

BACT analysis for VOC emissions from storage tanks

Valero proposes to construct 23 tanks, which are either subject to LAC 33:III.2103 and/or 40 CFR 60 Subpart Kb and/or 40 CFR 63 Subpart G. To comply with these regulations, the tanks will be equipped with floating roofs. Complying with one of these standards is determined as BACT. Details of BACT for storage tanks are listed in Table IV.

BACT analysis for VOC emissions from Rail Car Loading Rack

The rail car loading rack is subject to 40 CFR 63 Subpart G. This is MACT for VOC emissions from the rack. Therefore, complying with 40 CFR 63 Subpart G is also BACT for VOC emissions from the rack.

BACT analysis for SO₂ emissions the SRU Startups and Shutdowns (SU/SD)

To minimize emissions from the SRUs SU/SD, Valero shall 1) have written SU/SD standard operating procedures (SOPs) for the SRUs, 2) follow the written SOPs for the SRU SU/SD, 3) minimize the frequency and duration of SU/SD, and 4) properly document each SRU SU/SD. These are determined as BACT for SO₂ from the SRU SU/SD.

PRELIMINARY DETERMINATION SUMMARY

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008**

BACT analysis for VOC emissions from wastewater collection and conveyance equipment

Valero proposes to control VOC emissions from wastewater collection and conveyance equipment at the ARU as required by 40 CFR 63 Subparts F and G and at other units affected by the ULSD and the Refinery Expansion Project as required by LA Refinery MACT. These are the most stringent options to control VOC. Controlling VOC emissions from wastewater collection and conveyance equipment at the ARU as required by 40 CFR 63 Subparts F and G and at other unit of the ULSD and the Refinery Expansion Project as required by LA Refinery MACT are determined as BACT.

BACT analysis for VOC emissions from Wastewater Treatment Unit (WWTU)

The WWTU from the refinery is subject to the standards of 40 CFR 61 Subpart FF. Valero proposes to control VOC emissions from the WWTU as required by 40 CFR 61 Subpart FF. These are the most stringent options to control VOC emissions from refinery wastewater. Controlling VOC emissions from WWTU as required by 40 CFR 61 Subpart FF is determined as BACT. Wastewater from the proposed New CRU Individual Drain System will be subject to 40 CFR 60 Subpart QQQ and 40 CFR 61 Subpart FF. Complying with requirements of 40 CFR 60 Subpart QQQ and 40 CFR 61 Subpart FF is determined as BACT.

BACT analysis for VOC emissions from CC Reformers

VOC emissions from the CC Reformers (EQT364 and EQT365) will be controlled by 40 CFR 63 Subpart UUU. This control is determined as MACT for HAP emissions. This control is also considered BACT for VOC emissions.

BACT analysis for VOC emissions from Process Vents

Vents from the refinery are either exempt from MACT requirements (due to low HAP concentrations) or classified as Group 1 or Group 2 under 40 CFR 63 Subpart CC. Vents which are subject to Group 1 or Group 2 of 40 CFR 63 Subpart CC are controlled as required by Subpart CC. This control selection was determined as MACT and BACT. For other vents, routing to fuel gas system or flares is BACT for VOC.

BACT listed for unaffected equipment

Unaffected emissions from equipment that is listed in PSD-LA-619(M3) will be brought forward into this permit along with all its requirements. BACT determinations for both affected and unaffected equipment are listed in Tables III while Table IV shows the BACT for storage tanks.

PRELIMINARY DETERMINATION SUMMARY

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008**

B. ANALYSIS OF EXISTING AIR QUALITY

PSD regulations require an analysis of existing air quality for those pollutant emissions, which increase significantly from a proposed major modification. PM₁₀, SO₂, NO₂, and CO are the pollutants of concern in this case. Valero performed an air quality analysis for the original Refinery Expansion Project in 2006.

Screening dispersion modeling indicated that concentration of PM₁₀ (24-hour and annual average), SO₂ (3-hour, 24-hour, and annual average), and NO₂ (annual average) were above the modeling significance impact levels. Increment analysis and refined NAAQS modeling are required. The SO₂ (24-hour average) concentration was above the preconstruction monitoring exemption level of 13 µg/m³. Preconstruction monitoring was required. Valero used the monitoring data from the nearby LDEQ monitoring station in Hahnville, Louisiana, to fulfill the preconstruction SO₂ monitoring requirement. The station is approximately one (1) mile from the proposed site, and its data were representative of the ambient air in the local area. The 2004 monitoring data indicated that the SO₂ concentrations were 10 µg/m³ (annual average), 46 µg/m³ (24-hour average), and 147 µg/m³ (3-hour average). The modeled SO₂ concentrations from the NAAQS Sources and the proposed Refinery Expansion Project at the monitor receptor were above the monitored values; therefore, no background values were added to the NAAQS modeling results.

Screening dispersion modeling indicated that CO emissions from the proposed Refinery Expansion Project were below the modeling significance impact levels and preconstruction monitoring exemption level. Refined modeling, incremental analysis, and preconstruction monitoring were not required for CO.

VOC emission rate increases from the Refinery Expansion Project were more than 100 tons/yr. An ambient impact analysis, preconstruction, and post construction monitoring were required. Data from the nearby Hahnville Monitoring Station were used to fulfill this requirement. The data indicated that the air quality in the area complies with the national ambient air quality standards (NAAQS). Air quality will also be monitored for one year after plant startup using the Hahnville Monitoring Station. Impacts of emissions from the refinery on ambient air are listed in Table IIa.

An updated PSD significance model for the Revised Scope Refinery Expansion Project shows that the Area of Impact for each pollutant is less than for the original Refinery Expansion Project as approved under PSD-LA-619(M2).

PRELIMINARY DETERMINATION SUMMARY

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4), JULY 18, 2008**

C. NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) ANALYSIS

Valero proposes to implement the Revised Scope Refinery Expansion Project. Emissions of criteria pollutants from the Revised Scope Refinery Expansion Project are less than emissions from the original Refinery Expansion Project. Valero conducted screening dispersion modeling for all criteria pollutants. The results indicated that both the area of impact (AOI) and the maximum offsite ground level concentrations of criteria pollutants emitted from the Revised Scope Refinery Expansion Project are less than those of criteria pollutants emitted from the original Refinery Expansion Project, except concentration of NO₂. Therefore, emissions from the Revised Scope Refinery Expansion Project will not cause or contribute to any National Ambient Air Quality Standards (NAAQS) exceedances. Details of the comparison are listed in Table IIb.

D. PSD INCREMENT ANALYSIS

Based on the Increment analysis of the original Refinery Expansion Project and the comparison above, the PM₁₀, SO₂, and NO_x allowable increments in the area are preserved.

E. SOURCE RELATED GROWTH IMPACTS

Secondary growth effects are minimal. The project will not create any permanent jobs.

F. SOILS, VEGETATION, AND VISIBILITY IMPACTS

There will be no significant impact on soils, vegetation, and visibility.

G. CLASS I AREA IMPACTS

Breton National Wildlife Area, the nearest Class I area, is more than 100 miles from the site, precluding any significant impact.

H. TOXIC IMPACT

The selection of control technology based on the BACT analysis included consideration of control of toxic emissions.

V. CONCLUSION

The Louisiana Department of Environmental Quality, Office of Environmental Services, has made a preliminary determination to approve the PSD permit modification for Valero Refining – New Orleans, LLC's St. Charles Refinery, New Sarpy, St. Charles Parish, Louisiana, subject to the attached specific and general conditions. In the event of a discrepancy in the provisions found in the application and those in this Preliminary Determination Summary, the Preliminary Determination Summary shall prevail.

SPECIFIC CONDITIONS

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING - NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)**

1. The permittee is authorized to operate in conformity with the specifications submitted to the Louisiana Department of Environmental Quality (LDEQ) as analyzed in LDEQ's document entitled "Preliminary Determination Summary" dated July 18, 2008 and subject to the emission limitations listed in Table V and BACT determinations listed in Tables III and IV. Specifications submitted are contained in the application dated March 20, 2008, as well as additional information dated May 16, June 16, and July 15, 2008.
2. To demonstrate compliance with the limitations of this permit, permittee shall conduct emissions monitoring and perform compliance/emissions tests as listed in Table VI using methods specified by the cited regulations and 40 CFR 60, Appendix A, Method 7E - Determination of Nitrogen Oxides Emissions from Stationary Sources for NO_x emissions, Method 5 - Determination of Particulate Emissions from Stationary Sources for PM₁₀ emissions, and Method 10 - Determination of Carbon Monoxide Emissions from Stationary Sources for CO emissions.
3. Before beginning actual construction of the MSCCU Revamp Project, permittee shall document and maintain a record of the following information: 1) a description of the project; 2) the emissions units whose emissions of a regulated pollutant could be affected by the project; and 3) a description of the applicability test used to determine that the project is not a major modification for any regulated pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded from the projected actual emissions (the demand growth exclusion) and an explanation for why such amount was excluded, and any netting calculations, if applicable. [LAC 33:III.509.R.6]
4. Permittee shall monitor the PM₁₀ and SO₂ emissions from the MSCCU Revamp Project and calculate and maintain a record of the annual emissions, in TPY on a calendar year basis, for a period of 10 years following resumption of regular operations. [LAC 33:III.509.R.6]
5. Permittee shall submit a report to LDEQ within 60 days after the end of the year if annual PM₁₀ and SO₂ emissions, in TPY, from the project in question exceed the baseline actual emissions by a "significant" (as defined in LAC 33:III.509.B) amount, and if such emissions differ from the preconstruction projection. This report shall contain the following: 1) the name, address, and telephone number of the major stationary source; 2) the annual emissions; and 3) any other information that the owner or operator wishes to include in the report (e.g., an explanation as to why the emissions differ from the preconstruction projection.) [LAC 33:III.509.R.6]

SPECIFIC CONDITIONS

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING - NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)**

6. To assure compliance with the emission limits of this permit, permittee shall comply with the following requirements:
 - a. Install and operate flare gas recovery systems on Flares No. 2 and No. 1 (EQT0007 and EQT0013) by December 31, 2011, subject to a shakedown period, and shall be fully operational no later than 180 days from initial startup of the flare gas systems.
 - b. Install a flare gas recovery system on Flare No. 5 (EQT0240). The flare gas recovery system shall be installed and operated upon initial startup, subject to a shakedown period, and shall be fully operational up on achieving normal operation which shall be no later than 180 days from initial startup of the affected equipment.
 - c. Install a flare gas recovery system on the ARU Flare (EQT0349). The flare gas recovery system shall be installed and operated upon initial startup, subject to a shakedown period, and shall be fully operational up on achieving normal operation which shall be no later than 180 days from initial startup of the affected equipment.
 - d. Install a selective catalytic reduction (SCR) system on heaters/boilers EQT036, EQT037, EQT315, EQT316, EQT319, EQT321, EQT323, EQT324, EQT351, EQT352. The SCR systems shall be operated to the extent required to assure that the annual NOX emission limits of the permit are met. Permittee shall keep records of any time the heaters/boilers are operated without the SCR systems.
 - e. Route vents from the ARU Railcar Loading (EQT0357) and from tanks (EQT0327 through EQT0343) to the thermal oxidizers No. 5, No. 6, or No. 7 (EQT345, EQT346, or EQT347).
 - f. Equip the ARU and the ARU Marine Loading Dock (FUG027 and FUG029) with "leakless"-types or bellows-types valves, except control valves and valves with diameters equal or greater 10 inches.

LOUISIANA AIR EMISSION PERMIT GENERAL CONDITIONS

- I. This permit is issued on the basis of the emissions reported in the application for approval of emissions and in no way guarantees that the design scheme presented will be capable of controlling the emissions to the type and quantities stated. Failure to install, properly operate and/or maintain all proposed control measures and/or equipment as specified in the application and supplemental information shall be considered a violation of the permit and LAC 33:III.501. If the emissions are determined to be greater than those allowed by the permit (e.g. during the shakedown period for new or modified equipment) or if proposed control measures and/or equipment are not installed or do not perform according to design efficiency, an application to modify the permit must be submitted. All terms and conditions of this permit shall remain in effect unless and until revised by the permitting authority.
- II. The permittee is subject to all applicable provisions of the Louisiana Air Quality Regulations. Violation of the terms and conditions of the permit constitutes a violation of these regulations.
- III. The Emission Rates for Criteria Pollutants, Emission Rates for TAP/HAP & Other Pollutants, and Specific Requirements sections or, where included, Emission Inventory Questionnaire sheets establish the emission limitations and are a part of the permit. Any operating limitations are noted in the Specific Requirements or, where included, Tables 2 and 3 of the permit. The synopsis is based on the application dated March 20, 2008 as well as additional information dated May 16 and June 16, 2008.
- IV. This permit shall become invalid, for the sources not constructed, if:
 - A. Construction is not commenced, or binding agreements or contractual obligations to undertake a program of construction of the project are not entered into, within two (2) years (18 months for PSD permits) after issuance of this permit, or;
 - B. If construction is discontinued for a period of two (2) years (18 months for PSD permits) or more.The administrative authority may extend this time period upon a satisfactory showing that an extension is justified.
This provision does not apply to the time period between construction of the approved phases of a phased construction project. However, each phase must commence construction within two (2) years (18 months for PSD permits) of its projected and approved commencement date.
- V. The permittee shall submit semiannual reports of progress outlining the status of construction, noting any design changes, modifications or alterations in the construction schedule which have or may have an effect on the emission rates or ambient air quality levels. These reports shall continue to be submitted until such time as construction is certified as being complete. Furthermore, for any significant change in the design, prior approval shall be obtained from the Office of Environmental Services, Air Permits Division.
- VI. The permittee shall notify the Department of Environmental Quality, Office of Environmental Services, Air Permits Division within ten (10) calendar days from the date that construction is certified as complete and the estimated date of start-up of operation. The appropriate Regional Office shall also be so notified within the same time frame.

**LOUISIANA AIR EMISSION PERMIT
GENERAL CONDITIONS**

- VII. Any emissions testing performed for purposes of demonstrating compliance with the limitations set forth in paragraph III shall be conducted in accordance with the methods described in the Specific Conditions and, where included, Tables 1, 2, 3, 4, and 5 of this permit. Any deviation from or modification of the methods used for testing shall have prior approval from the Office of Environmental Assessment, Air Quality Assessment Division.
- VIII. The emission testing described in paragraph VII above, or established in the specific conditions of this permit, shall be conducted within sixty (60) days after achieving normal production rate or after the end of the shakedown period, but in no event later than 180 days after initial start-up (or restart-up after modification). The Office of Environmental Assessment, Air Quality Assessment Division shall be notified at least (30) days prior to testing and shall be given the opportunity to conduct a pretest meeting and observe the emission testing. The test results shall be submitted to the Air Quality Assessment Division within sixty (60) days after the complete testing. As required by LAC 33:III.913, the permittee shall provide necessary sampling ports in stacks or ducts and such other safe and proper sampling and testing facilities for proper determination of the emission limits.
- IX. The permittee shall, within 180 days after start-up and shakedown of each project or unit, report to the Office of Environmental Compliance, Enforcement Division any significant difference in operating emission rates as compared to those limitations specified in paragraph III. This report shall also include, but not be limited to, malfunctions and upsets. A permit modification shall be submitted, if necessary, as required in Condition I.
- X. The permittee shall retain records of all information resulting from monitoring activities and information indicating operating parameters as specified in the specific conditions of this permit for a minimum of at least five (5) years.
- XI. If for any reason the permittee does not comply with, or will not be able to comply with, the emission limitations specified in this permit, the permittee shall provide the Office of Environmental Compliance, Enforcement Division with a written report as specified below.
 - A. A written report shall be submitted within 7 days of any emission in excess of permit requirements by an amount greater than the Reportable Quantity established for that pollutant in LAC 33.I.Chapter 39.
 - B. A written report shall be submitted within 7 days of the initial occurrence of any emission in excess of permit requirements, regardless of the amount, where such emission occurs over a period of seven days or longer.
 - C. A written report shall be submitted quarterly to address all emission limitation exceedances not included in paragraphs A or B above. The schedule for submittal of quarterly reports shall be no later than the dates specified below for any emission limitation exceedances occurring during the corresponding specified calendar quarter:
 - 1. Report by June 30 to cover January through March
 - 2. Report by September 30 to cover April through June
 - 3. Report by December 31 to cover July through September
 - 4. Report by March 31 to cover October through December

LOUISIANA AIR EMISSION PERMIT GENERAL CONDITIONS

- D. Each report submitted in accordance with this condition shall contain the following information:
1. Description of noncomplying emission(s);
 2. Cause of noncompliance;
 3. Anticipated time the noncompliance is expected to continue, or if corrected, the duration of the period of noncompliance;
 4. Steps taken by the permittee to reduce and eliminate the noncomplying emissions; and
 5. Steps taken by the permittee to prevent recurrences of the noncomplying emissions.
- E. Any written report submitted in advance of the timeframes specified above, in accordance with an applicable regulation, may serve to meet the reporting requirements of this condition provided all information specified above is included. For Part 70 sources, reports submitted in accordance with Part 70 General Condition R shall serve to meet the requirements of this condition provided all specified information is included. Reporting under this condition does not relieve the permittee from the reporting requirements of any applicable regulation, including LAC 33.I.Chapter 39, LAC 33.III.Chapter 9, and LAC 33.III.5107.
- XII. Permittee shall allow the authorized officers and employees of the Department of Environmental Quality, at all reasonable times and upon presentation of identification, to:
- A. Enter upon the permittee's premises where regulated facilities are located, regulated activities are conducted or where records required under this permit are kept;
 - B. Have access to and copy any records that are required to be kept under the terms and conditions of this permit, the Louisiana Air Quality Regulations, or the Act;
 - C. Inspect any facilities, equipment (including monitoring methods and an operation and maintenance inspection), or operations regulated under this permit; and
 - D. Sample or monitor, for the purpose of assuring compliance with this permit or as otherwise authorized by the Act or regulations adopted thereunder, any substances or parameters at any location.
- XIII. If samples are taken under Section XII.D. above, the officer or employee obtaining such samples shall give the owner, operator or agent in charge a receipt describing the sample obtained. If requested prior to leaving the premises, a portion of each sample equal in volume or weight to the portion retained shall be given to the owner, operator or agent in charge. If an analysis is made of such samples, a copy of the analysis shall be furnished promptly to the owner, operator or agency in charge.
- XIV. The permittee shall allow authorized officers and employees of the Department of Environmental Quality, upon presentation of identification, to enter upon the permittee's premises to investigate potential or alleged violations of the Act or the rules and regulations adopted thereunder. In such investigations, the permittee shall be notified at the time entrance is requested of the nature of the suspected violation. Inspections under this subsection shall be limited to the aspects of alleged violations. However, this shall not in any way preclude

LOUISIANA AIR EMISSION PERMIT GENERAL CONDITIONS

prosecution of all violations found.

- XV. The permittee shall comply with the reporting requirements specified under LAC 33:III.919 as well as notification requirements specified under LAC 33:III.927.
- XVI. In the event of any change in ownership of the source described in this permit, the permittee and the succeeding owner shall notify the Office of Environmental Services in accordance with LAC 33:I.Chapter 19.Facility Name and Ownership/Operator Changes Process.
- XVII. Very small emissions to the air resulting from routine operations, that are predictable, expected, periodic, and quantifiable and that are submitted by the permitted facility and approved by the Air Permits Division are considered authorized discharges. Approved activities are noted in the General Condition XVII Activities List of this permit. To be approved as an authorized discharge, these very small releases must:
1. Generally be less than 5 TPY
 2. Be less than the minimum emission rate (MER)
 3. Be scheduled daily, weekly, monthly, etc., or
 4. Be necessary prior to plant startup or after shutdown [line or compressor pressuring/depressuring for example]

These releases are not included in the permit totals because they are small and will have an insignificant impact on air quality. This general condition does not authorize the maintenance of a nuisance, or a danger to public health and safety. The permitted facility must comply with all applicable requirements, including release reporting under LAC 33:I.3901.

- XVIII. Provisions of the permit may be appealed to the secretary in writing pursuant to La. R.S. 30:2024(A) within 30 days from notice of the permit action. A request may be made to the secretary to suspend those provisions of the permit specifically appealed. The permit remains in effect to the extent that the secretary or assistant secretary does not elect to suspend the appealed provisions as requested or, at his discretion, other permit provisions as well. Construction cannot proceed, except as specifically approved by the secretary or assistant secretary, until a final decision has been rendered on the appeal. A request for hearing must be sent to the Office of the Secretary. A request for hearing must be sent to the following:

Attention: Office of the Secretary, Legal Services Division
La. Dept. of Environmental Quality
Post Office Box 4302
Baton Rouge, Louisiana 70821-4302

- XIX. For Part 70 sources, certain Part 70 general conditions may duplicate or conflict with state general conditions. To the extent that any Part 70 conditions conflict with state general conditions, then the Part 70 general conditions control. To the extent that any Part 70 general conditions duplicate any state general conditions, then such state and Part 70 provisions will be enforced as if there is only one condition rather than two conditions.

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING - NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)

TABLE I: BACT COST SUMMARY FOR NOX FROM BOILER AND HEATERS

Control Alternatives	Availability/ Feasibility	Negative Impacts (a)	Control Efficiency (%)	Emissions Reduction (TPY)	Annualized Cost (\$/yr)	Cost Effectiveness (\$/ton)	Increment Cost Effectiveness (\$/ton)	Notes
2008-1	ULNB + SCR	1, 2, 3	93	13.18	195566	14842	40550	Rejected
	SCR	1, 2, 3	90	12.75	202840	15905	46143	Rejected
	ULNB	Yes	59	8.39	1445	172	172	Selected
Baseline								
2008-2	ULNB + SCR	1, 2, 3	95	623.27	2359731	3786	21118	Rejected
	SCR	1, 2, 3	90	587.44	2676166	4556	35449	Rejected
	ULNB	Yes	79	512.55	21416	42	42	Selected
Baseline								
2008-3	ULNB + SCR	1, 2, 3	95	454.21	1817900	4002	22327	Rejected
	SCR	1, 2, 3	90	428.09	2050673	4790	37277	Rejected
	ULNB	Yes	79	373.52	16282	44	44	Selected
Baseline								
2008-4	ULNB + SCR	1, 2, 3	93	39.13	444186	11352	31013	Rejected
	SCR	1, 2, 3	90	37.87	463787	12245	35528	Rejected
	ULNB	Yes	59	24.91	3296	132	132	Selected
Baseline								
2008-5	ULNB + SCR	1, 2, 3	95	87.26	489699	5612	31340	Rejected
	SCR	1, 2, 3	90	82.24	537738	6539	50918	Rejected
	ULNB	Yes	79	71.76	3883	54	54	Selected
Baseline								

ST. CHARLES REFINERY
 AGENCY INTEREST NO. 26003
 VALERO REFINING - NEW ORLEANS, LLC
 NEW SARPY, ST. CHARLES PARISH, LOUISIANA
 PSD-LA-619(M4)

TABLE I: BACT COST SUMMARY FOR NOX FROM BOILER AND HEATERS

Control Alternatives	Availability/ Feasibility	Negative Impacts (a)	Control Efficiency (%)	Emissions Reduction (TPY)	Annualized Cost (\$/yr)	Cost Effectiveness (\$/ton)	Increment Cost Effectiveness (\$/ton)	Notes
2008-6	ULNB + SCR	Yes	1, 2, 3	95	568.74	2187408	3846	21454 Rejected
	SCR	Yes	1, 2, 3	90	536.03	2476967	4621	35958 Rejected
	ULNB	Yes		79	467.70	19722	42	42 Selected
	Baseline			-	-	-	-	-
2008-7	ULNB + SCR	Yes	1, 2, 3	95	86.48	486354	5624	31404 Rejected
	SCR	Yes	1, 2, 3	90	81.51	533958	6551	51013 Rejected
	ULNB	Yes		79	71.12	3883	55	55 Selected
	Baseline			-	-	-	-	-
2008-8	ULNB + SCR	Yes	1, 2, 3	95	568.74	2187408	3846	21454 Rejected
	SCR	Yes	1, 2, 3	90	536.03	2476967	4621	35958 Rejected
	ULNB	Yes		79	467.70	19722	42	42 Selected
	Baseline			-	-	-	-	-
2008-9	ULNB + SCR	Yes	1, 2, 3	95	86.48	486354	5624	31404 Rejected
	SCR	Yes	1, 2, 3	90	81.51	533958	6551	51013 Rejected
	ULNB	Yes		79	71.12	3883	55	55 Selected
	Baseline			-	-	-	-	-
2008-10	ULNB + SCR	Yes	1, 2, 3	95	506.41	1987664	3925	21896 Rejected
	SCR	Yes	1, 2, 3	- 90	477.29	2246445	4707	36627 Rejected
	ULNB	Yes		79	416.44	17765	43	43 Selected
	Baseline			-	-	-	-	-

**ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)**

TABLE I: BACT COST SUMMARY FOR NOX FROM BOILER AND HEATERS

Control Alternatives	Availability/Feasibility	Negative Impacts (a)	Control Efficiency (%)	Emissions Reduction (TPY)	Annualized Cost (\$/yr)	Cost Effectiveness (\$/ton)	Increment Cost Effectiveness (\$/ton)	Notes
2008-11	ULNB + SCR	Yes	1, 2, 3	95	506.41	1987664	3925	21896 Rejected
	SCR	Yes	1, 2, 3	90	477.29	2246445	4707	36627 Rejected
	ULNB	Yes		79	416.44	17765	43	43 Selected
	Baseline			-	-	-	-	-
2008-40	ULNB + SCR	Yes	1, 2, 3	95	506.41	1987664	3925	21896 Rejected
	SCR	Yes	1, 2, 3	90	477.29	2246445	4707	36627 Rejected
	ULNB	Yes		79	416.44	17765	43	43 Selected
	Baseline			-	-	-	-	-
2005-8	ULNB + SCR	Yes	1, 2, 3	93	31.94	380179	11902	32527 Rejected
	SCR	Yes	1, 2, 3	90	30.92	3956561	12826	37225 Rejected
	ULNB	Yes		59	20.34	2696	133	133 Selected
	Baseline			-	-	-	-	-
2005-9	ULNB + SCR	Yes	1, 2, 3	93	26.35	328540	12467	34065 Rejected
	SCR	Yes	1, 2, 3	90	25.51	342214	13416	38930 Rejected
	ULNB	Yes		59	16.78	2391	142	142 Selected
	Baseline			-	-	-	-	-
2005-10	ULNB + SCR	Yes	1, 2, 3	95	208.80	969990	4646	25933 Rejected
	SCR	Yes	1, 2, 3	90	196.79	1080324	5490	42740 Rejected
	ULNB	Yes		79	171.70	8057	47	47 Selected
	Baseline			-	-	-	-	-

Notes:
a) Negative impacts: 1) economic, 2) environmental, 3) energy, 4) safety

ST. CHARLES REFINERY
 AGENCY INTEREST NO. 26003
 VALERO REFINING - NEW ORLEANS, LLC
 NEW SARPY, ST. CHARLES PARISH, LOUISIANA
 PSD-LA-619(M4)

TABLE IIa: AIR QUALITY ANALYSIS SUMMARY ($\mu\text{g}/\text{m}^3$)
 ORIGINAL REFINERY EXPANSION PROJECT (2006)

Pollutant	Averaging Period	Preliminary Screening	Significant Monitoring	Level of Significant Impact	At Monitoring Station		Background Modeling Results	Maximum Modeled Background	Modeled + Modeled Background	NAAQS	Modeled PSD Increment Consumption	Allowable Class II PSD Increment
					Monitored Values	Modeling Results						
PM_{10}	24-hour	7.5	10	5	37	28	9	22	31	150	16	30
	Annual	2.8		1	22	7	15	17	32	50	2	17
SO_2	3-hour	85		25	196	477	0	947	947	1300	368	512
	24-hour	28	13	5	58	186	0	362	362	365	88	91
NO_2	Annual	3.4		1	11	41	0	62	62	80	20	20
	Annual	2.8	14	1	24	42	0	71	71	100	22	25
CO	1-hour	694		2000				NR		40,000	NR	
	8-hour	175	575	500				NR		10,000	NR	
NAAQS = National Ambient Air Quality Standards												
NR = Not Required												

ST. CHARLES REFINERY
 AGENCY INTEREST NO. 26003
 VALERO REFINING – NEW ORLEANS, LLC
 NEW SARPY, ST. CHARLES PARISH, LOUISIANA
 PSD-LA-619(M4)

TABLE IIb: AIR QUALITY ANALYSIS - COMPARISION TABLE
 ORIGINAL REFINERY EXPANSION PROJECT (2006) VS. REVISED SCOPE REFINERY EXPANSION PROJECT (2008)

Pollutant	Proposed Emissions		Averaging Period	Preliminary Screening		Area of Impact (AOI) (meters)
	OREP06	RSOREP08		OREP06	RSOREP08	
PM ₁₀	1061.71	899.89	24-hour	7.5	7.0	4913
			Annual	2.8	1.4	1647
SO ₂	3449.39	2274.59	3-hour	85	59.4	2003
			24-hour	28	27.6	1083
			Annual	3.4	3.0	11646
NO _x	3450.09	1883.99	Annual	2.8	4.1	40787
CO	5595.01	4657.46	1-hour	694	305.5	41516
			8-hour	175	170.3	17539
						2847
						2847

OREP06: Original Refinery Expansion Project (2006)

RSOREP08: Revised Scope Refinery Expansion Project (2008)

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)

TABLE III: BEST AVAILABLE CONTROL TECHNOLOGY (BACT) SELECTION

Emission Point	PM/PM ₁₀	SO ₂	NO _x	CO	VOC	H ₂ S	H ₂ SO ₄
EQT016 - FCC No. 2 Regenerator	Wet Scrubber to maintain PM <= 2.0 lbs per ton of coke burned	Wet Scrubber => 90% SO ₂ control efficiency or SO ₂ <50 ppmv (7 day rolling average)	Full Burn <= 20 ppmdv (annual average)	Full Burn design <= 250 mg/Nm ³	Good Combustion Practices (Full Burn)		
EQT029 - Boiler					Proper design and operation, Good combustion practices, Use of gaseous fuels <= 0.08 lb/MM BTU		
EQT036 - Heater EQT037 - Heater	Proper design and operation, Good combustion practices, Use of gaseous fuels	Natural gas and/or refinery fuel gas with H ₂ S <=100 ppmv (annual average)	ULNB, <= 0.04 lbs/MM BTU	Proper design and operation, Good combustion practices, Use of gaseous fuels <= 0.08 lb/MM BTU	Proper design and operation, Good combustion practices, Use of gaseous fuels <= 0.08 lb/MM BTU		
EQT057 - Coke Handling	Keep coke wet while storing and transporting						
EQT074, EQT085, EQT086 - Kb Tanks						40 CFR 60 Subpart Kb	
EQT076 - Heater EQT078 - Heater EQT080 - Boiler EQT081 - Boiler	Clean Fuels	Natural gas and/or refinery fuel gas with H ₂ S <=100 ppmv (annual average)	Fuel choices, Operating techniques, and LNB	Good operating practices			
EQT077 - Heater EQT079 - Heater	Proper design and operation, Good combustion practices, Use of gaseous fuels	Natural gas and/or refinery fuel gas with H ₂ S <=100 ppmv (annual average)	LNB, <= 0.05 lbs/MM BTU	Proper design and operation, Good combustion practices, Use of gaseous fuels <= 0.08 lb/MM BTU	Proper design and operation, Good combustion practices, Use of gaseous fuels <= 0.08 lb/MM BTU		

ST. CHARLES REFINERY
 AGENCY INTEREST NO. 26003
 VALERO REFINING – NEW ORLEANS, LLC
 NEW SARPY, ST. CHARLES PARISH, LOUISIANA
 PSD-LA-619(M4)

TABLE III: BEST AVAILABLE CONTROL TECHNOLOGY (BACT) SELECTION

Emission Point	PM/PM ₁₀	SO ₂	NO _x	CO	VOC	H ₂ S	H ₂ SO ₄
EQT092 – Petroleum Loading Docks					LAC 33:III.2108 for loading materials with VP > 1.5 psia		
EQT095, EQT097, EQT104, EQT135, EQT136, EQT137 Sulfuric Acid Tanks					Fixed Roofs and Submerged Fill Pipes		
EQT105 Sulfuric Acid Loading					Submerged Fill pipes		
EQT184 - Loading				40 CFR 63 Subpart CC			
EQT198, EQT199 Spent Caustic Tanks				LAC 33:III.2103			
EQT200 - Vent Gas Wash Tower				No additional control			
EQT242 FCCU No. 3	Wet Scrubber to maintain PM <= 2.0 lbs per ton of coke burned	Scrubber efficiency <= 20 ppmvd (annual average) =>90% or SO ₂ < 50 ppmv (7 day rolling average)	<= 250 mg/Nm ³ CEMS	Full Burn design Good Combustion Practices (Full Burn)	Good Combustion Practices (Full Burn)	Scrubber efficiency =>90% or SO ₂ < 50 ppmv (7 day rolling average)	
EQT249 - Sulfur Loading					Proper design and operation		
EQT250, EQT251 Coker Steam Vents				No additional control			
EQT254 Process Vents				Route to the fuel gas systems or a flare	Route to the fuel gas systems or a flare		

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)

TABLE III: BEST AVAILABLE CONTROL TECHNOLOGY (BACT) SELECTION

Emission Point	PM/PM ₁₀	SO ₂	NO _x	CO	VOC	H ₂ S	H ₂ SO ₄
EQT255 - Wastewater Collection and Conveyance					HON for ARU, Refinery MACT for Refinery		
EQT348 Cooling Tower	Drift Eliminators				VOC monitoring program meets 40 CFR 63 Subpart F		
EQT350 – MVR Thermal Oxidizer 1	Gaseous Fuels	Natural gas and/or refinery fuel gas with H ₂ S <=100 ppmv (annual average)	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices	Comply with LAC 33:III.21.08 and 40 CFR 63 Subpart CC		
EQT351 – MVR Thermal Oxidizer 2	Proper design and operation, Good combustion practices and gaseous fuels	Natural gas and/or Process fuel gas with H ₂ S <=10 ppmv (annual average)	Proper design and operation, Good combustion practices and gaseous fuels	Proper design and operation, Good combustion practices and gaseous fuels	Comply with CFR 61 Subpart BB		
EQT353 – Thermal Oxidizer No. 8	Proper design and operation, Good combustion practices and gaseous fuels	Natural gas and/or refinery fuel gas with H ₂ S <=100 ppmv (annual average)	Proper design and operation, Good combustion practices and gaseous fuels	Proper design and operation, Good combustion practices and gaseous fuels	Comply with all 40 CFR 61 Subpart FF		
EQT357 - Loading					Comply with 40 CFR 63 Subpart G		
EQT358 SRU SU/SD		Follow written SOP, minimize duration and frequency, properly document all SU/SD					
EQT359 – WWTF					Comply with 40 CFR 61 Subpart FF		

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)

TABLE III: BEST AVAILABLE CONTROL TECHNOLOGY (BACT) SELECTION

Emission Point	PM ₁₀ /PM _{2.5}	SO ₂	NO _x	CO	VOC	H ₂ S	H ₂ SO ₄
EQT361 - API-S					Comply with 40 CFR 61 Subpart FF		
EQT362 - DGF					Comply with 40 CFR 61 Subpart BB		
EQT363 ARU Marine Loading					Comply with 40 CFR 63 Subpart UUU		
EQT364, EQT365 CC Reformers					Comply with 40 CFR 60 Subpart QQQ and 40 CFR 61 Subpart FF		
EQT369 - CRUDS					40 CFR 63 Subpart CC		
EQT370, EQT371 Process Vents					40 CFR 63 Subpart A		
EQT372 – ARU Flare	Comply with 40 CFR 60 Subpart A	Natural gas and/or fuel gas with H ₂ S <=10 ppmv (annual average)	Comply with 40 CFR 60 Subpart A	Comply with 40 CFR 60 Subpart A	Comply with 40 CFR 60 Subpart A	LA Refinery MACT	
FUG025 Paved Road	Paving roads or wetting unpaved roads as necessary					40 CFR 63 Subpart H	
FUG026 – Refinery Fugitives						40 CFR 61 Subpart V	
FUG027 – ARU Fugitives						40 CFR 63 Subpart CC	
FUG029 – ARU Loading Fugitives							
CRG001 – Tanks							
CRG002 – Tanks							
CRG009 - Tanks							

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING - NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)

TABLE III: BEST AVAILABLE CONTROL TECHNOLOGY (BACT) SELECTION

Emission Point	PM/PM ₁₀	SO ₂	NO _x	CO	VOC	H ₂ S	H ₂ SO ₄
CRG003 Kb Tanks					40 CFR 60 Subpart Kb		
CRG004 - Heaters	Proper design and operation, Good combustion practices, Use of gaseous fuels	Natural gas and/or refinery fuel gas with H ₂ S <=100 ppmv (annual average)	ULNB, <= 0.04 lbs/MM BTU	Proper design and operation, Good combustion practices, Use of gaseous fuels <= 0.08 lb/MM BTU	Proper design and operation, Good combustion practices, Use of gaseous fuels <= 0.08 lb/MM BTU		
CRG005 - Heaters CRG010 – Heaters EQT314	Comply with 40 CFR 60 Subparts NNN and RRR	Natural gas and/or fuel gas with H ₂ S <=10 ppmv (annual average)	ULNB, NO _x <= 0.04 lbs/MM BTU w/ air preheat, <=0.03 w/o air preheat	Comply with 40 CFR 60 Subparts NNN and RRR	Comply with 40 CFR 60 Subparts NNN and RRR		
CRG007 HON Group 2 Tanks					Internal Floating Roofs (*)	(*) Subsumed by routing to the thermal oxidizers	
CRG008 – IFR Tanks					40 CFR 63 Subpart G (IFRs) (*)	(*) Subsumed by routing to the thermal oxidizers	
CRG11 – Boilers	Comply with 40 CFR 60 Subparts NNN and RRR	Natural gas and/or fuel gas with H ₂ S <=10 ppmv (annual average) and or refinery fuel gas with H ₂ S <= 100 ppmv (annual average)	ULNB lbs/MM BTU <= 0.04 w/ air preheat, <=0.03 without air preheat	Comply with 40 CFR 60 Subparts NNN and RRR	Comply with 40 CFR 60 Subparts NNN and RRR		
CRG012 - Tanks					Internal Floating Roofs (*)	(*) Subsumed by routing to the thermal oxidizers	
CRG013: only EQT010, EQT035, EQT243, EQT244 Cooling Towers	Drift Eliminators				VOC monitoring program		

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)

TABLE III: BEST AVAILABLE CONTROL TECHNOLOGY (BACT) SELECTION

Emission Point	PM/PM ₁₀	SO ₂	NO _x	CO	VOC	H ₂ S	H ₂ SO ₄
GRPP006 – FLARECAP	Comply with 40 CFR 63 Subpart A	Natural gas and/or refinery fuel gas with H ₂ S <=100 ppmv (annual average)	Comply with 40 CFR 63 Subpart A	Comply with 40 CFR 63 Subpart A	Comply with 40 CFR 63 Subpart A		
GRPP007 - SRU/TOCAP	Proper design and operation, Good combustion practices and gaseous fuels	<= 250 ppmvd (12 hour rolling ave)	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices
GRPP012 – ULSDCAP	Proper design and operation, Good combustion practices, Use of gaseous fuels	Natural gas and/or fuel gas with H ₂ S <=100 ppmv (annual average)	ULNB, <= 0.04 lbs/MM BTU	Proper design and operation, Good combustion practices, Use of gaseous fuels <= 0.08 lb/MM BTU	Proper design and operation, Good combustion practices, Use of gaseous fuels <= 0.08 lb/MM BTU	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices
GRPP015 – HCU1CAP GRPP016 – HCU2/LEU3CAP	Gaseous Fuels	Natural gas and/or refinery fuel gas with H ₂ S <=100 ppmv (annual average)	LNB 0.08 lbs/MM BTU	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices		
GRPP013 - DHTCAP EQT063 - Heater				0.08 lbs/MMBTU			
GRPP018 - TANKTOCAP	Proper design and operation, Good combustion practices and gaseous fuels	Natural gas and/or process fuel gas with H ₂ S <=10 ppmv (annual average)	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices	Proper design and operation, Good combustion practices		

ST. CHARLES REFINERY
 AGENCY INTEREST NO. 26003
 VALERO REFINING - NEW ORLEANS, LLC
 NEW SARPY, ST. CHARLES PARISH, LOUISIANA
 PSD-LA-619(M4)

Common Requirements Groups	
CRG001	Tanks
CRG002	Tanks
CRG003	Tanks
CRG004	Heaters
CRG005	Heaters
CRG007	Tanks
CRG008	Tanks
CRG009	Tanks
CRG010	Heaters
CRG011	Boilers
CRG012	Tanks
CRG013	Cooling Towers
Equipment Groups	
GRP005	COKERCAP Heaters
GRP006	FLARECAP Flares
GRP007	SRU/TOCAP Thermal Oxidizers
GRP008	TANKCAP Tanks
GRP012	ULSDCAP Heaters
GRP013	DHTCAP Heaters
GRP015	HCU1CAP Heaters
GRP016	HCU2/LEU3CAP Heaters
GRP018	TANKTOCAP Thermal Oxidizers
SCN002	VACCAP Heaters
Listed in Table IV	
019, 041, 042, 160, 161, 162, 164, 165, 179, 180, 186, 187, 188	
006, 008, 018, 027, 043, 044, 047, 087, 088, 090, 098, 103, 134, 142, 143, 146, 148, 149, 150, 151, 154, 155, 156, 157, 166, 167, 168, 169, 171, 172, 173, 174, 175, 176, 178, 182, 183	
026, 045, 046, 048, 049, 050, 051, 066, 067, 068, 069, 091, 099, 169, 171, 181, 189	
060, 203, 204, 205, 224, 237, 238, 239	
315, 316, 319, 321	
330, 331, 334, 335	
327, 328, 332, 333, 336, 337, 340, 341, 344	
245, 246, 325, 326, 329, 354, 355, 356	
317, 318, 220, 322	
323, 324, 352	
338, 339, 342, 343	
010, 035, 055, 058, 075, 082, 083, 084, 244	
012, 014, 017, 052	
007, 013, 034, 240, 360	
TRT001, TRT002, TRT003, TRT006, EQT195, EQT196, EQT241, EQT313	
028, 031, 032, 033	
054, 056	
054, 056	
225, 226, 227, 228, 229, 230	
345, 346, 347	
004, 005	

ST. CHARLES REFINERY
 AGENCY INTEREST NO. 26003
 VALERO REFINING - NEW ORLEANS, LLC
 NEW SARPY, ST. CHARLES PARISH, LOUISIANA
 PSD-LA-619(M4)

TABLE IV: BACT SELECTION FOR STORAGE TANKS

EQT No.	E/Q No.	Tank No.	Volume (barrels)	Roof	Material Stored	LAC 33-III. Subpart	Applicable Regulations 40 CFR 60 Subpart CC	Per 63.640(h)	BACT Shall comply with
EQT089	94-57	T-04-24	300	FR	Diesel		Group 2		40 CFR 63 Subpart CC
EQT090	94-58	T-04-23	300	FR	Light Materials		Group 2		40 CFR 63 Subpart CC
EQT091	94-59	67-1	67,000	EFR	Light Materials	2103	Kb	Group 1	40 CFR 60 Subpart Kb
EQT097	96-4	T-1403	1933	FR	H2SO4				FR
EQT099	96-6	T-04-32	62,900	EFR	Sour Water	2103	Kb	Group 1	40 CFR 60 Subpart Kb
EQT103	98-113	V-28-4	724	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT104	98-114	H2SO4		FR	H2SO4				FR
EQT134	98-40	41	37,500	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT142	98-48	55-5	55,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT143	98-49	55-6	55,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT146	98-52	57	11,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT148	98-54	75	15,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT149	98-55	76	16,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT150	98-56	77	15,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT151	98-57	78	16,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT154	98-60	80-1	80,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT155	98-61	80-3	80,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT156	98-62	80-4	80,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT157	98-63	81	25,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT160	98-66	130-1	130,000	EFR	Light Materials	2103		Group 1	40 CFR 63 Subpart CC
EQT161	98-67	130-2	130,000	EFR	Light Materials	2103		Group 1	40 CFR 63 Subpart CC
EQT162	98-68	130-3	130,000	EFR	Light Materials	2103		Group 1	40 CFR 63 Subpart CC
EQT164	98-70	130-5	130,000	EFR	Light Materials	2103		Group 1	40 CFR 63 Subpart CC
EQT165	98-71	130-6	130,000	EFR	Light Materials	2103		Group 1	40 CFR 63 Subpart CC
EQT166	98-72	130-7	130,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT167	98-73	130-8	130,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC
EQT168	98-74	130-9	130,000	FR	Heavy Materials			Group 2	40 CFR 63 Subpart CC

ST. CHARLES REFINERY
 AGENCY INTEREST NO. 26003
 VALERO REFINING - NEW ORLEANS, LLC
 NEW SARPY, ST. CHARLES PARISH, LOUISIANA
 PSD-LA-619(M4)

TABLE V - MAXIMUM ALLOWABLE EMISSION RATES

EQT	Description	Capacity MM BTU/hr	Maximum Permitted Emission Rates				
			PM/PN ₁₀	SO ₂	NO _x	CO	VOC
EQT004	10-81 - Vacuum No. 2 Heater F-52-1A	430	lbs/hr	3.21	11.02	17.21	35.43
EQT005	11-81 - Vacuum No. 2 Heater F-52-1B	430	lbs/hr	3.21	11.02	17.20	35.43
EQT007	12-81 - Flare No. 2	144	lbs/hr	1.00	50.00	31.00	28.50
EQT010	13-81 - Cooling Tower 403	61,000 gpm	lbs/hr tons/yr	1.20			2.57 < 0.01
EQT012	14-81 - Coker No. 1 Heater No. 1 F-53-1A	243	lbs/hr	1.81	6.22	9.72	20.01
EQT013	15-77 - Flare No. 1	144	lbs/hr	1.00	50.00	31.00	1.31
EQT014	15-81 - Coker No. 1 Heater No. 2 F-53-1B	243	lbs/hr	1.81	6.22	9.72	20.01
EQT016	16-77 - FCCU No. 2 Regenerator	110,000 bbl/day	lbs/hr tons/yr	74.60	79.60	144.89	696.80
EQT017	16-81 - Coker No. 1 Heater No. 3 F-53-1C	243	lbs/hr	191.78	295.00	195.00	13.60
EQT028	2004-1 - Hydro Treater Heater No. 1 H-60-1	86	lbs/hr	0.64	2.21	3.46	7.12
EQT029	2004-10 - Boiler 401-E	525	lbs/hr tons/yr			43.24	126.25
EQT031	2004-2 - Hydro Treater Heater No. 2 H-60-2	24	lbs/hr	0.18	0.61	0.96	1.98
EQT032	2004-3 - Hydro Treater Heater No. 3 H-60-3	52	lbs/hr	0.38	1.32	2.06	4.25
EQT033	2004-4 - Hydro Treater Heater No. 4 H-60-4	86	lbs/hr	0.64	2.21	3.46	7.12
EQT034	2004-5 - Flare No. 3	120	lbs/hr	0.17	25.00	12.95	28.05
EQT035	2004-6 - Cooling Tower CT-600	42,000 gpm	lbs/hr tons/yr	0.09			1.89 < 0.01
EQT036	2004-7 - SMR 1 Heater No. 1	885	lbs/hr tons/yr	6.59	22.67	35.40	72.88
EQT037	2004-8 - SMR 1 Heater No. 2	885	lbs/hr tons/yr	6.59	22.67	35.40	72.88
				66.18	38.76	212.82	13.93
				19.25		103.37	212.82
							13.93

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING - NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)

TABLE V - MAXIMUM ALLOWABLE EMISSION RATES

EQT	Description	Capacity MM BTU/hr	Maximum Permitted Emission Rates					
			PM/PM ₁₀	SO ₂	NO _x	CO	VOC	H ₂ S
EQT052	36-81 - Coker No. 1 Heater No. 4 F-53-1D	243	lbs/hr	1.81	6.22	9.72	20.01	1.31
EQT054	4-81 - H-15-01A	70	lbs/hr	0.52	1.79	5.60	5.76	0.38
EQT055	5-76 - Cooling Tower 402	50,700 gpm		0.12			2.52	< 0.01
EQT056				0.41			8.83	< 0.01
EQT057	5-81 - H-15-01B	70	lbs/hr	0.52	1.79	5.60	5.76	0.38
EQT058	5-83 - Coke Handling	12207 tpd	tons/yr	2.47				
EQT060	6-81 - HDS No. 1 Heater H-15-05	135	lbs/hr	1.01	3.46	5.40	11.12	0.73
EQT062			tons/yr	2.94	10.10	15.77	32.46	2.13
EQT076	94-21 - Heater F-33-05	48	lbs/hr	0.36	1.23	3.84	3.95	0.26
EQT077	94-28 - Heater H-39-03		tons/yr	1.31	4.49	14.02	14.43	0.94
EQT078	94-29 - Heater H-39-01	68	lbs/hr	0.50	1.73	3.31	5.56	0.36
EQT079	94-30 - Heater H-39-02		tons/yr	1.47	5.05	9.66	16.23	1.06
EQT080	94-43 - Boiler B-401C	75	lbs/hr	0.56	1.92	3.68	6.18	0.40
EQT081	94-45 - Boiler B-401D		tons/yr	1.63	5.61	10.74	18.04	1.18
EQT089	94-57 - Tank T-04-24	90	lbs/hr	0.67	2.30	4.41	7.41	0.49
EQT090	94-58 - Tank T-04-23		tons/yr	1.96	6.73	12.88	21.64	1.42
EQT092	94-9 - Petroleum Product Loading Docks	400 bbl	lbs/hr	3.43	11.79	46.37	37.92	2.48
EQT093			tons/yr	10.02	34.44	107.57	110.74	7.25
EQT094								
EQT095								
EQT096								
EQT097								
EQT098								
EQT099								

ST. CHARLES REFINERY
AGENCY INTEREST NO. 26003
VALERO REFINING – NEW ORLEANS, LLC
NEW SARPY, ST. CHARLES PARISH, LOUISIANA
PSD-LA-619(M4)

TABLE VI: MONITORING AND TESTING REQUIREMENTS

EQT No.	Description	CO		NOX		SO₂		PM		Opacity		Other Requirements
		CEMS	TEST	CEMS	TEST	CEMS	TEST	TEST	TEST	COM		
EQT195	99-3 - Thermal Oxidizer No. 2							NSPS-J	NSPS-J			
EQT196	99-4 - Thermal Oxidizer No. 3							NSPS-J	NSPS-J			
EQT203	2005-1 - Crude 2 Heater B			PSD				PSD				PSD
EQT204	2005-2 - VAC 2 Charge Heater			PSD				PSD				PSD
EQT205	2005-3 - COKER 2 Charge Heater			PSD				PSD				PSD
EQT210	2005-8 - H001 1st Stage Charge Heater	PSD										
EQT211	2005-9 - H002 2nd Stage Charge Heater	PSD										
EQT212	2005-10 - H003 Fractionator Charge Heater	PSD										
EQT224	2005-22 - GDU 2 Heater	PSD										PSD
EQT225	2005-23 - HCU 2 1st Stage Charge Heater	PSD										PSD
EQT226	2005-24 - HCU 2 2nd Stage Charge Heater	PSD										PSD
EQT227	2005-25 - HCU 2 Absorber/Dec 2 Reboiler	PSD										PSD
EQT228	2005-26 - HCU 2 Naphtha Splitter Reboiler	PSD										PSD
EQT229	2005-27 - HCU 2 Recycle Splitter Reboiler	PSD										PSD
EQT230	2005-28 - LEU 2 Dec 4 Reboiler	PSD										PSD
EQT237	2005-35 - PENEX Rx Feed Heater	PSD										PSD
EQT238	2005-36 - PENEX Dryer Regenerator Heater	PSD										PSD
EQT239	2005-37 - PENEX Mole Sieve Regen. Heater	PSD										
EQT240	2005-38 - Flare No. 5											Weekly visible emission check
EQT241	2005-39 - Thermal Oxidizer No. 1							NSPS-J	NSPS-J			
EQT242	2005-40 - FCCU No. 3 Regenerator	NSPS-J	NSPS-J	PSD				NSPS-J	NSPS-J	NSPS-J*	(* or approved alternatives)	
EQT313	2007-4 - Thermal Oxidizer No. 4							NSPS-J	NSPS-J			
EQT314	2008-1 - CRU H1			PSD				PSD				
EQT315	2008-2 - CRU H2, H4, and H5	PSD								PSD		
EQT316	2008-3 - CRU H3	PSD						PSD				PSD

ST. CHARLES REFINERY
 AGENCY INTEREST NO. 26003
 VALERO REFINING - NEW ORLEANS, LLC
 NEW SARPY, ST. CHARLES PARISH, LOUISIANA
 PSD-LA-619(M4)

TABLE VI: MONITORING AND TESTING REQUIREMENTS

EQT No.	Description	CO		NOX		SO2		PM		Opacity		Other Requirements
		CEMS	TEST	CEMS	TEST	CEMS	TEST	TEST	COM	TEST	COM	
EQT317	2008-4 - TPU H1	PSD	PSD	PSD	PSD							
EQT318	2008-5 - TPU H2	PSD	PSD	PSD	PSD							
EQT319	2008-6 - PEU No. 1 H1	PSD	PSD	PSD	PSD							PSD
EQT320	2008-7 - PEU No. 1 H2	PSD	PSD	PSD	PSD							PSD
EQT321	2008-8 - PEU No. 2 H1	PSD	PSD	PSD	PSD							PSD
EQT322	2008-9 - PEU No. 2 H2	PSD	PSD	PSD	PSD							PSD
EQT323	2008-10 - Boiler 401-F	PSD	NSPS:Db	PSD	NSPS:Db							PSD
EQT324	2008-11 - Boiler 401-G	PSD	NSPS:Db	PSD	NSPS:Db							VOC & T: 40 CFR 63 Subpart G
EQT345	2008-32 - Thermal Oxidizer No. 5											VOC & T: 40 CFR 63 Subpart G
EQT346	2008-33 - Thermal Oxidizer No. 6											VOC & T: 40 CFR 63 Subpart G
EQT347	2008-34 - Thermal Oxidizer No. 7											VOC & T: 40 CFR 63 Subpart G
EQT350	94-8 - MVR Thermal Oxidizer No. 1											VOC & T: 40 CFR 63 Subpart Y
EQT351	2008-38 - MVR Thermal Oxidizer No. 2.											VOC & T: 40 CFR 61 Subpart BB
EQT352	2008-40 - Boiler 401-H	PSD	NSPS:Db	PSD	NSPS:Db							PSD
EQT353	2008-41 - Thermal Oxidizer No. 8											VOC: NSPS-QQQ
EQT357	2008-46 - Railcar Loading Rack											VOC: 40 CFR 63 Subpart G
EQT360	2004-5B - Flare No. 4											Weekly visible emission check

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Emission Point ID No. (Alternate ID)		Descriptive Name of the Emissions Source (Alt. Name)		Approximate Location of Stack or Vent (see instructions)			
2008-11		Boiler B401-G		Method	28,"GPS, Unspecified"	Datum	NAD83
Tempo Subject Item ID No.		UTM Zone	15	Horizontal	751873	mE	Vertical 3320963 mN hundredths
		Latitude	"	Longitude	"		
Stack and Discharge Physical Characteristics Change? (yes or no)		Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft ³ /min)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point
Yes		8 ft	200 ft	27.5 ft/sec	8760 hr/yr	2008 Jan-Mar Apr-Jun Jul-Sep Oct-Dec	25% 25% 25% 25% 25%
Fuel		Operating Parameters (include units)				Description	
Type of Fuel Used and Heat Input (see instructions)		Parameter					
a		Heat Input (MMBTU/hr)	715.00	Normal Operating Rate/Throughput	650.00 MM BTU/hr		
NG/RFG		Maximum Operating Rate/Throughput	715.00 MM BTU/hr				
		Design Capacity/Volume					
		Shell Height (ft)					
		Tank Diameter (ft)					
		<input type="checkbox"/> Fixed Roof	<input type="checkbox"/> Floating Roof	<input type="checkbox"/> External	<input type="checkbox"/> Internal		
Notes							
For all heaters and boilers, average hour emissions will be calculated assuming 8760 hrs/yr of operation.							
Air Pollutant Specific Information							
Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Continuous Compliance Method
2008-11			Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)	Concentration of gases existing at stack
Pollutant							
CARBON MONOXIDE		53.53	58.88	234.46		Add	
NITROGEN OXIDES		9.75	28.60	42.71		Add	
PARTICULATE MATTER/PM10		4.84	5.33	21.21		Add	
SULFUR DIOXIDE		17.14	18.85	75.06		Add	
TOTAL VOC (INCL LISTED)		3.50	3.86	15.35		Add	
AMMONIA		7664.417	3.21	12.77		Add	
		2.92					

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Descriptive Name of the Emissions Source (Alt. Name)

Thermal Oxidizer No. 6

Approximate Location of Stack or Vent (see instructions)

Method	28, "GPS-Unspecified"		Datum	NAD83
UTM Zone	15	Horizontal	752239	mt: Vertical " hundredths
Latitude	"	"	"	" hundredths
Longitude	"	"	"	" hundredths
Stack Gas Flow at Conditions, not at Standard (ft ³ /min)		Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Percent of Annual Throughput Through This Emission Point
Diameter (ft) or Stack Discharge Area (ft ²)	7	ft	8760	Jan-Mar Apr-Jun Jul-Sep Oct-Dec 25 25 25 25
Height of Stack Above grade (ft)	100	ft	°F	2008
Stack Gas Exit Velocity ft/sec	51.3	ft/sec	hr/yr	proposed
ft ³ /min	1152			
Operating Parameters (include units)		Description		
Normal Operating Rate/Throughput				
Maximum Operating Rate/Throughput				
Design Capacity/Volume				
Shell Height (ft)				
Tank Diameter (ft)				
<input checked="" type="checkbox"/> Fixed Roof				
<input type="checkbox"/> Floating Roof				
			External	
			<input type="checkbox"/>	Internal
Heat Input (MMBtu/hr)	15.00	Parameter	Description	
Type of Fuel				
NG/Fuel Gas				
Notes				
Emissions are associated with the TANKTOCAP.				
Air Pollutant Specific Information	Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates
	2008-33			
Pollutant		Control Equipment Efficiency	Average (lbs/hr)	Max (lbs/hr)
CARBON MONOXIDE				1.24
NITROGEN OXIDES				1.47
PARTICULATE MATTER/PM10				0.11
SULFUR DIOXIDE				0.02
TOTAL VOC (INCL. LISTED)				0.20
BENZENE				0.03
ETHYL BENZENE				0.01
HEXANE (N)				0.02
TOLUENE				< 0.001
XYLENE (MIXED ISOMERS)				0.02
				1330-20-7
Permitted Emission Rate (Current)	Annual (tons/yr)	Annual (tons/yr)	Continuous Compliance Method	Concentration of gases existing at stack

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of Submission
March 2008

Emission Point ID No. (Alternate ID)		Descriptive Name of the Emissions Source (Alt. Name)		Approximate Location of Stack or Vent (see instructions)									
2008-37 Tempo Subject Item ID No.		ARU Marine Loading Dock Fugitive Emissions		Method	28,'GPS-Unspecified"		Datum	NAD83					
Stack and Discharge Physical Characteristics Change? (yes or no)	Yes	UTM Zone	15	Horizontal	751388	mE	Vertical	331952.3 mN hundredths					
		Latitude	-	-	-	-	-	-	-	-	-	-	
Fuel	Type of Fuel Used and Heat Input (see instructions) Type of Fuel	Longitude	-	-	-	-	-	-	-	-	-		
		Stack Gas Exit Velocity	Stack Gas Exit Above grade (ft)	Stack Gas Flow at Standard (ft ³ /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point					
Diameter (ft) or Stack Discharge Area (ft ²)	ft	ft	°F	2008	Jan	Feb	Mar	Apr	May	Jun	Oct-Dec		
ft ²	ft	ft/sec	ft ³ /min	8760	8760	8760	8760	8760	8760	8760	8760		
Heat Input (MMBtu/hr)			Operating Parameters (include units)	Parameter			Description						
			Normal Operating Rate/Throughput										
			Maximum Operating Rate/Throughput										
			Design Capacity/Volume										
			Shell Height (ft)										
			Tank Diameter (ft)										
			<input type="checkbox"/> Fixed roof				<input type="checkbox"/> Floating roof				<input type="checkbox"/> External	<input type="checkbox"/> Internal	
Air Pollutant Specific Information								Concentration of gases existing at stack					
Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method				
2008-37			Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)								
TOTAL VOC (INCL LISTED)			0.31	1.36									
BENZENE			0.15	0.65									
XYLENE (MIXED ISOMERS)			7143.2	0.71									
			1336.207										

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Emission Point ID No. (Alternate ID)		Descriptive Name of the Emissions Source (Alt. Name)		Approximate Location of Stack or Vent (see instructions)																																																																																																																																																																	
2008-38		MVR Thermal Oxidizer #2		Method	28,"GPS-Unspecified"		Datum	NAD83																																																																																																																																																													
Tempo Subject Item ID No.				UTM Zone	15	Horizontal	751395	mi:	Vertical	331952.5	mN																																																																																																																																																										
				Latitude	°						hundredths																																																																																																																																																										
				Longitude	°						hundredths																																																																																																																																																										
Stack and Discharge Physical Characteristics Change? (yes or no)		Diameter (ft) or Stack Discharge Area (ft ²)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Standard Conditions, not at Standard (ft ³ /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point																																																																																																																																																												
Yes		12 ft ²	70 ft	21.3 ft/sec	ft ³ /min	892 °F	8760 hr/yr	2008	Jan-Mar	Apr-Jun	Oct-Dec																																																																																																																																																										
Fuel	Type of Fuel	Heat Input (MMBtu/hr)		Heat Input (MMBtu/hr)		Operating Parameters (include units)		Operating Parameters (include units)																																																																																																																																																													
a	NG/Fuel Gas	200.00		200.00		Parameter		Parameter																																																																																																																																																													
		Notes																																																																																																																																																																			
<table border="1"> <thead> <tr> <th colspan="2">Type of Fuel Used and Heat Input (see instructions)</th> <th colspan="2">Normal Operating Rate/Throughput</th> <th colspan="2">Maximum Operating Rate/Throughput</th> <th colspan="2">Design Capacity/Volume</th> <th colspan="2">Shell Height (ft)</th> <th colspan="2">Tank Diameter (ft)</th> </tr> </thead> <tbody> <tr> <td colspan="2">Type of Fuel</td> <td colspan="2">Normal Operating Rate/Throughput</td> <td colspan="2">Maximum Operating Rate/Throughput</td> <td colspan="2">Design Capacity/Volume</td> <td colspan="2">Shell Height (ft)</td> <td colspan="2">Tank Diameter (ft)</td> </tr> <tr> <td colspan="2">NG/Fuel Gas</td> <td colspan="2">200.00</td> <td colspan="2">200.00</td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> </tbody> </table>												Type of Fuel Used and Heat Input (see instructions)		Normal Operating Rate/Throughput		Maximum Operating Rate/Throughput		Design Capacity/Volume		Shell Height (ft)		Tank Diameter (ft)		Type of Fuel		Normal Operating Rate/Throughput		Maximum Operating Rate/Throughput		Design Capacity/Volume		Shell Height (ft)		Tank Diameter (ft)		NG/Fuel Gas		200.00		200.00																																																																																																																													
Type of Fuel Used and Heat Input (see instructions)		Normal Operating Rate/Throughput		Maximum Operating Rate/Throughput		Design Capacity/Volume		Shell Height (ft)		Tank Diameter (ft)																																																																																																																																																											
Type of Fuel		Normal Operating Rate/Throughput		Maximum Operating Rate/Throughput		Design Capacity/Volume		Shell Height (ft)		Tank Diameter (ft)																																																																																																																																																											
NG/Fuel Gas		200.00		200.00																																																																																																																																																																	
<table border="1"> <thead> <tr> <th colspan="2">Notes</th> <th colspan="2"><input type="checkbox"/> Fixed Roof</th> <th colspan="2"><input type="checkbox"/> Floating Roof</th> <th colspan="2"><input type="checkbox"/> External</th> <th colspan="2"><input type="checkbox"/> Internal</th> </tr> </thead> <tbody> <tr> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> </tbody> </table>												Notes		<input type="checkbox"/> Fixed Roof		<input type="checkbox"/> Floating Roof		<input type="checkbox"/> External		<input type="checkbox"/> Internal																																																																																																																																																	
Notes		<input type="checkbox"/> Fixed Roof		<input type="checkbox"/> Floating Roof		<input type="checkbox"/> External		<input type="checkbox"/> Internal																																																																																																																																																													
<table border="1"> <thead> <tr> <th colspan="2">Air Pollutant Specific Information</th> <th colspan="2">Control Equipment Code</th> <th colspan="2">HAP/TAP CAS Number</th> <th colspan="2">Proposed Emission Rates</th> <th colspan="2">Permitted Emission Rate (Current)</th> <th colspan="2">Continuous Compliance Method</th> <th colspan="2">Concentration of gases exiting at stack</th> </tr> <tr> <th colspan="2">Emission Point ID No. (Alternate ID)</th> <th colspan="2"></th> <th colspan="2"></th> <th>Average (lbs/hr)</th> <th>Max (lbs/hr)</th> <th>Annual (ton/yr)</th> <th>Annual (ton/yr)</th> <th>Add, Change, Delete, or Unchanged</th> </tr> </thead> <tbody> <tr> <td colspan="2">2008-38</td> <td colspan="2"></td> <td colspan="2"></td> <td>16.47</td> <td>24.71</td> <td>44.73</td> <td>53.25</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td>19.61</td> <td>29.41</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2">CARBON MONOXIDE</td> <td colspan="2"></td> <td colspan="2"></td> <td>1.49</td> <td>2.23</td> <td>4.05</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2">NITROGEN OXIDES</td> <td colspan="2"></td> <td colspan="2"></td> <td>0.30</td> <td>0.45</td> <td>0.82</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2">PARTICULATE MATTER/PM10</td> <td colspan="2"></td> <td colspan="2"></td> <td>3.60</td> <td>5.40</td> <td>0.82</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2">SULFUR DIOXIDE</td> <td colspan="2"></td> <td colspan="2"></td> <td>71.43-2</td> <td>0.31</td> <td>0.46</td> <td>0.07</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2">TOTAL VOC (INCL LISTED)</td> <td colspan="2"></td> <td colspan="2"></td> <td>108.88-3</td> <td>0.001</td> <td>0.001</td> <td>< 0.01</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2">BENZENE</td> <td colspan="2"></td> <td colspan="2"></td> <td>1.330-20-7</td> <td>0.08</td> <td>0.11</td> <td>0.02</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="2">TOLUENE</td> <td colspan="2"></td> <td colspan="2"></td> <td>XYLENE (MIXED ISOMERS)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>												Air Pollutant Specific Information		Control Equipment Code		HAP/TAP CAS Number		Proposed Emission Rates		Permitted Emission Rate (Current)		Continuous Compliance Method		Concentration of gases exiting at stack		Emission Point ID No. (Alternate ID)						Average (lbs/hr)	Max (lbs/hr)	Annual (ton/yr)	Annual (ton/yr)	Add, Change, Delete, or Unchanged	2008-38						16.47	24.71	44.73	53.25											19.61	29.41							CARBON MONOXIDE						1.49	2.23	4.05						NITROGEN OXIDES						0.30	0.45	0.82						PARTICULATE MATTER/PM10						3.60	5.40	0.82						SULFUR DIOXIDE						71.43-2	0.31	0.46	0.07					TOTAL VOC (INCL LISTED)						108.88-3	0.001	0.001	< 0.01					BENZENE						1.330-20-7	0.08	0.11	0.02					TOLUENE						XYLENE (MIXED ISOMERS)										
Air Pollutant Specific Information		Control Equipment Code		HAP/TAP CAS Number		Proposed Emission Rates		Permitted Emission Rate (Current)		Continuous Compliance Method		Concentration of gases exiting at stack																																																																																																																																																									
Emission Point ID No. (Alternate ID)						Average (lbs/hr)	Max (lbs/hr)	Annual (ton/yr)	Annual (ton/yr)	Add, Change, Delete, or Unchanged	Add, Change, Delete, or Unchanged	Add, Change, Delete, or Unchanged	Add, Change, Delete, or Unchanged																																																																																																																																																								
2008-38						16.47	24.71	44.73	53.25																																																																																																																																																												
						19.61	29.41																																																																																																																																																														
CARBON MONOXIDE						1.49	2.23	4.05																																																																																																																																																													
NITROGEN OXIDES						0.30	0.45	0.82																																																																																																																																																													
PARTICULATE MATTER/PM10						3.60	5.40	0.82																																																																																																																																																													
SULFUR DIOXIDE						71.43-2	0.31	0.46	0.07																																																																																																																																																												
TOTAL VOC (INCL LISTED)						108.88-3	0.001	0.001	< 0.01																																																																																																																																																												
BENZENE						1.330-20-7	0.08	0.11	0.02																																																																																																																																																												
TOLUENE						XYLENE (MIXED ISOMERS)																																																																																																																																																															

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Emission Point ID No. (Alternate ID)		Descriptive Name of the Emissions Source (Alt. Name)		Approximate Location of Stack or Vent (see instructions)	
2008-41		Thermal Oxidizer No. 8		Method 28, "GPS-Unspecified" UTM Zone 15 Horizontal 752028 mE Vertical 3320896 mN Latitude Longitude	
Tempo Subject Item ID No.				Datum NAD83 hundredths hundredths	
Stack and Discharge Physical Characteristics Change? (yes or no)		Diameter (ft) or Stack Discharge Area (ft ²)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Standard Conditions, not at Standard (ft ³ /min)
Yes		7 ft ²	100 ft	51.3 ft/sec	ft ³ /min
Fuel	Type of Fuel	Type of Fuel Used and Heat Input (see instructions)			
a	NG/Fuel Gas	Heat Input (MMBtu/hr) 10.00			
Notes					
<input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal					
Parameter Description					
		Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point
		ft ³ /min	8760 hr/yr	2008	Jan-Mar Apr-Jun Jul-Sep Oct-Dec
		1152 °F	proposed	25	25 25 25
Operating Parameters (include units)					
<input type="checkbox"/> Normal Operating Rate/Throughput <input type="checkbox"/> Maximum Operating Rate/Throughput <input type="checkbox"/> Design Capacity/volume <input type="checkbox"/> Shell Height (ft) <input type="checkbox"/> Tank Diameter (ft)					
<input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal					
Concentration of gases exiting at stack					
Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates	Permitted Emission Rate (Current)	Add, Change, or Unchanged
2008-41			Average (lbs/hr)	Annual (tons/yr)	Continuous Compliance Method
CARBON MONOXIDE			Max (lbs/hr)		
NITROGEN OXIDES			0.82	3.61	Add
PARTICULATE MATTER/PM10			0.98	4.29	Add
SULFUR DIOXIDE			0.08	0.33	Add
TOTAL VOC (INCL. LISTED)			0.26	1.12	Add
2,2,4-TRIMETHYL PENTANE			0.06	0.24	Add
BENZENE			< 0.001	< 0.01	Add
HEXANE (N)			< 0.001	< 0.01	Add
PHENOL			< 0.001	< 0.01	Add
TOLUENE			< 0.001	< 0.01	Add
XYLENE (MIXED ISOMERS)			< 0.001	< 0.01	Add

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Emission Point ID No. (Alternate ID)		Descriptive Name of the Emissions Source (Alt. Name)		Approximate Location of Stack or Vent (see instructions)													
TANKTOCAP		ARU Tank Farm Thermal Oxidizer CAP		Method			Horizontal			Vertical			Datum				
Tempo Subject Item ID No.				UTM Zone	Latitude	Longitude	°	°	°	°	°	°	mN	mN			
TANKTOCAP													hundredths	hundredths			
Stack and Discharge Physical Characteristics Change? (yes or no)		Diameter (ft) or Stack Discharge Area (ft ²)		Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Standard Conditions, not at Standard (ft ³ /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec		
No	a	7	ft ²	100 ft	ft/sec	ft ³ /min	1152 °F	8760 hr/yr	25	25	25	25	25	25	25		
Fuel	Type of Fuel Used and Heat Input (see instructions)	Type of Fuel	Heat Input (MMBTU/hr)	Operating Parameters (include units)										Description			
	NG/Fuel Gas		45.00	Parameter										Description			
<p>Notes:</p> <p>Sources controlled by CAP include: 2008-14, 2008-15, 2008-16, 2008-17, 2008-18, 2008-19, 2008-20, 2008-21, 2008-22, 2008-23, 2008-24, 2008-25, 2008-26, 2008-27, 2008-28, 2008-29, 2008-30, 2008-31, 2008-46</p>																	
Air Pollutant Specific Information		Emission Point ID No. (Alternate ID)		Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)			Continuous Compliance Method			Concentration of gases exiting at stack	
TANKTOCAP		TANKTOCAP					Max (lbs/hr)	Average (lbs/hr)	Annual (ton/yr)	Annual (tons/yr)	Add, Change, Delete, or Unchanged	Add	Add	Add	Add		
CARBON MONOXIDE							2.47	2.47	10.82	-	-	-	-	-	-		
NITROGEN OXIDES							2.94	2.94	12.88	-	-	-	-	-	-		
PARTICULATE MATTER/PM10							0.23	0.23	0.98	-	-	-	-	-	-		
SULFUR DIOXIDE							0.05	0.05	0.20	-	-	-	-	-	-		
TOTAL VOC (INCL LISTED)							0.43	0.43	.88	-	-	-	-	-	-		
BENZENE							71-43-2	0.95	4.16	-	-	-	-	-	-		
ETHYLBENZENE							100-41-4	0.01	0.05	-	-	-	-	-	-		
HEXANE (-N)							110-54-3	0.04	0.17	-	-	-	-	-	-		
TOLUENE							108-88-3	0.002	< 0.01	-	-	-	-	-	-		
XYLENE (MIXED ISOMERS)							1330-20-7	0.01	0.18	-	-	-	-	-	-		

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Date of Submittal
March 2008

Approximate Location of Stack or Vent (see instructions)

Emission Point ID No.
(Alternate ID) Descriptive Name of the Emissions Source (Alt. Name)

Cooling Tower (#800)

Tempo Subject Item ID No.
(Alternate ID) 94-2

EQT075

Stack and Discharge
Physical Characteristics
Change? (yes or no)
No

Diameter (ft) or Stack
Discharge Area (ft²)
22 ft²

Height of Stack
Above grade (ft)
52 ft

Stack Gas Exit
Velocity
ft/sec

Type of Fuel Used and Heat Input (see instructions)
Type of Fuel Heat Input (MMBTU/hr)
No

Notes

Method
UTM Zone
Latitude
Longitude

15	Horizontal	794903.74 m ²	Vertical	3323698.1 m ²
0	0	31 "	69 "	69 hundredths
89	0	34 "	1 "	1 hundredths
56				
Stack Gas Exit Conditions, not at Standard (ft ³ /min)		Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point
		°F	n/a	Jun Mar Apr Jun Jul Sep Oct Dec
		°F	8760 hr/yr	25 25 25 25
		ft ³ /min		

Operating Parameters (include units)

Parameter Description
Normal Operating Rate/Throughput
2.13 MM gal/hr
Maximum Operating Rate/Throughput
2.54 MM gal/hr
Design Capacity/Volume
Shell Height (ft)
Tank Diameter (ft)

<input checked="" type="checkbox"/> Fixed Roof	<input type="checkbox"/> Floating Roof	<input type="checkbox"/> External	<input type="checkbox"/> Internal
Notes			

Air Pollutant Specific Information

Emission Point ID No. (Alternate ID) 94-2

Pollutant

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current)	Add, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases existing at stack
PARTICULATE MATTER/PM10	-	-	-	-	0.69	3.04	3.04	-	-	-
TOTAL VOC (INCL LISTED)	-	-	-	-	1.49	6.53	6.53	-	-	-
1,3-BUTADIENE	-	-	-	-	< 0.001	< 0.001	< 0.001	-	-	-
2,2,4-TRIMETHYLPHENANE	-	-	-	-	106.99-0	-	-	-	-	-
BENZENE	-	-	-	-	540.84-1	0.01	0.03	0.03	-	-
BIPHENYL	-	-	-	-	71-43-2	0.01	0.04	0.04	-	-
CHLORINE	-	-	-	-	92-52-4	< 0.001	0.01	0.01	0.01	-
CRESOLS (MIXED ISOMERS)	-	-	-	-	7782-50-5	0.11	0.11	0.60	0.60	-
CUMENE	-	-	-	-	1319-77-3	< 0.001	< 0.001	0.01	0.01	-
ETHYLBENZENE	-	-	-	-	98-82-8	< 0.001	< 0.001	< 0.01	< 0.01	-
HEXANE (N)	-	-	-	-	100-41-4	0.003	0.004	0.01	0.01	-
HYDROGEN SULFIDE	-	-	-	-	110-54-3	0.01	0.01	0.05	0.05	-
METHANOL	-	-	-	-	7783-06-4	< 0.001	< 0.001	0.01	0.01	-
	-	-	-	-	67-56-1	0.01	0.01	0.04	0.04	-

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Date of Submittal
March 2008

Approximate Location of Stack or Vent (see instructions)

Emission Point ID No.
(Alternate ID)

Cooling Tower (#800)

94-2

Tempo Subject Item ID No.

EQT075

Stack and Discharge
Physical Characteristics
Change? (yes or no)

No

Type of Fuel Used and Heat Input (see instructions)
Type of Fuel

Heat Input (MMBTU/hr)

Fuel

Notes

Method	UTM Zone	15	Horizontal	794903.74	mE	Vertical	3323698.1	mN
Latitude	30	°	0	31	°	69	hundredths	
Longitude	89	°	56	34	°	1	hundredths	
Stack Gas Exit Temperature	Normal Operating Time (hours per year)							
Stack Gas Exit Conditions, not at Standard (ft ³ /min)	Stack Gas Flow at Velocity							
ft ³ /min	ft/sec							
ft/sec	ft/min							

Operating Parameters (include units)

Parameter

2.13 MM gal/hr

2.54 MM gal/hr

Normal Operating Rate/Throughput

Maximum Operating Rate/Throughput

Design Capacity/Volume

Shell Height (ft)

Tank Diameter (ft)

Fixed Roof

Floating Roof

External

Internal

Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates	Permitted Emission Rate (Current)	Add, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases existing at stack
94-2			Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)		
METHYL TERT-BUTYL ETHER		1634-04-4	0.00	0.00	0.13	-	-
NAPHTHALENE		91-20-3	0.00	< 0.01	< 0.01	-	-
PHENOL		108-95-2	< 0.001	0.01	0.01	-	-
STYRENE		100-42-5	< 0.001	0.01	0.01	-	-
TOLUENE		108-88-3	0.02	0.03	0.10	0.10	-
XYLENE (MIXED ISOMERS)		1330-20-7	0.03	0.03	0.12	0.12	-

Air Pollutant Specific Information

Pollutant

METHYL TERT-BUTYL ETHER

NAPHTHALENE

PHENOL

STYRENE

TOLUENE

XYLENE (MIXED ISOMERS)

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Emission Point ID No. (Alternate ID)	Descriptive Name of the Emissions Source (Alt. Name)		Approximate Location of Stack or Vent (see instructions)	
94-47	Cooling Tower		Datum	
Tempo Subject Item ID No.				
EQT082	Diameter (ft) or Stack Discharge Area (ft ²)	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft ³ /min)
No	3.3 ft ²	44 ft	ft/sec	ft ³ /min
Fuel	Type of Fuel Used and Heat Input (see instructions)	Heat Input (MMBTU/hr)		Operating Parameters (include units)
Type of Fuel				Parameter
				Normal Operating Rate/Throughput Maximum Operating Rate/Throughput Design Capacity/Volume
				Stack Height (ft)
				Tank Diameter (ft)
Notes		<input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input checked="" type="checkbox"/> External <input type="checkbox"/> Internal		
Approximate Location of Stack or Vent (see instructions)				
Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates	Concentration of gases exiting at stack
94-47	Control Equipment Efficiency	Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)
PARTICULATE MATTER/PM10		0.20	0.24	0.86
TOTAL VOC (INCL LISTED)		0.42	0.51	1.84
1,3-BUTADIENE		< 0.001	< 0.001	0.001
2,2,4-TRIMETHYLPIENTANE		540-84-1	0.002	0.01
BENZENE		71-43-2	0.002	0.01
BIPHENYL		92-52-4	< 0.001	< 0.01
CHLORINE		7782-50-5	0.04	0.17
CRESOLS (MIXED ISOMERS)		1319-77-3	< 0.001	< 0.01
CUMENE		98-82-8	< 0.001	< 0.01
ETHYLBENZENE		100-41-4	< 0.001	< 0.01
HEXANE (-N)		110-54-3	0.003	0.01
HYDROGEN SULFIDE		7783-06-4	< 0.001	< 0.01
METHANOL		67-56-1	0.003	0.01
Permitted Emission Rate (Current)	Add, Change, or Unchanged	Continuous Compliance Method		

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Emission Point ID No.
(Alternate ID) Descriptive Name of the Emissions Source (Alt. Name)

94-47 Cooling Tower

Tempo Subject Item ID No.		Approximate Location of Stack or Vent (see instructions)		Datum				
		Method	U/M Zone	15	Horizontal 794790.02 m ² Vertical 3323747.1 m ²			
		Latitude	30 °	0 "	33 " 38 hundredths			
		Longitude	89 °	56 "	38 " 29 hundredths			
Stack and Discharge Physical Characteristics Change? (yes or no)	EQ1082	Diameter (ft) or Stack Discharge Area (ft ²)	Stack Gas Exit Conditions, not at Standard (ft ³ /min)	Normal Operating Time (hours per year)	Percent of Annual Throughput Through This Emission Point			
		3.3 ft		Stack Gas Exit Velocity		Normal Temperature (°F)		
Fuel	No	ft ²	ft/sec	°F	Date of Construction or Modification			
		ft ²	ft/sec	ft ³ /min		0 hr/yr		
		Type of Fuel Used and Heat Input (see instructions)	Operating Parameters (include units)		Description			
		Type of Fuel	Normal Operating Rate/Throughput	Parameter	0.60 MM gal/hr			
		Heat Input (MMBTU/hr)	Maximum Operating Rate/Throughput	Parameter	0.72 MM gal/hr			
			Design Capacity/Volume					
			Shell Height (ft)					
			Tank Diameter (ft)					
			<input checked="" type="checkbox"/> Fixed Roof	Floating Roof	<input type="checkbox"/> External <input checked="" type="checkbox"/> Internal			
Notes								
Air Pollutant Specific Information								
Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates		Permitted Emission Rate (Current)	Add. Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
Pollutant			Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)		
METHYL TERT-BUTYL ETHER		1634-04-4	0.00	< 0.001	0.00	0.04	Delete	
NAPHTHALENE		91-20-3	< 0.001	< 0.01	-	< 0.01		
PHENOL		108-95-2	< 0.001	< 0.01	-	< 0.01		
STYRENE		100-42-5	< 0.001	< 0.01	-	< 0.01		
TOLUENE		108-88-3	0.01	0.01	0.03	0.03		
XYLENE (MIXED ISOMERS)		1330-20-7	0.01	0.01	0.03	0.03		

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Emission Point ID No. (Alternate ID)		Descriptive Name of the Emissions Source (Alt. Name)		Approximate Location of Stack or Vent (see instructions)																																																																																																																																		
2004-6 Tempo Subject Item ID No.		CT-600		Method 28,"GPS-Unspecified"																																																																																																																																		
Tempo Subject Item ID No.				U/T/M Zone	1.5	Horizontal	751630 mN Vertical																																																																																																																															
EQI'035		Diameter (ft) of Stack Discharge Area (ft ²)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft ³ /min)	Stack Gas Exit Temperature (°F)	Date of Construction or Modification																																																																																																																															
No	22 ft ²	44 ft	38.5 ft/sec	ft ³ /min	0 °F	Normal Operating Time (hours per year)																																																																																																																																
Fuel	Type of Fuel Used	Heat Input (MMBtu/hr)		Operating Parameters (include units)																																																																																																																																		
	Type of Fuel			Normal Operating Rate/Throughput	Parameter																																																																																																																																	
				Maximum Operating Rate/Throughput	2.16 MM gal/hr																																																																																																																																	
				Design Capacity/Volume	2.59 MM gal/hr																																																																																																																																	
				Shell Height (ft)																																																																																																																																		
				Tank Diameter (ft)																																																																																																																																		
		Notes																																																																																																																																				
<p><input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal</p> <p><input type="checkbox"/> Description</p>																																																																																																																																						
<table border="1"> <thead> <tr> <th>Emission Point ID No. (Alternate ID)</th> <th>Control Equipment Code</th> <th>HAP/TAP CAS Number</th> <th colspan="4">Proposed Emission Rates</th> </tr> <tr> <th colspan="2">2004-6</th> <th colspan="2">Control Equipment Efficiency</th> <th>Average (lb/hr)</th> <th>Max (lb/hr)</th> <th>Annual (tons/yr)</th> <th>Permitted Emission Rate (Current)</th> </tr> </thead> <tbody> <tr> <td>POLLUTANT</td> <td></td> <td></td> <td></td> <td>0.07</td> <td>0.09</td> <td>0.31</td> <td>Add, Change, Delete, or Unchanged</td> </tr> <tr> <td>PARTICULATE MATTER/PM10</td> <td></td> <td></td> <td></td> <td>1.51</td> <td>1.89</td> <td>6.62</td> <td>Continuous Compliance Method</td> </tr> <tr> <td>TOTAL VOC (INCL. LISTED)</td> <td></td> <td></td> <td></td> <td><0.001</td> <td><0.001</td> <td><0.001</td> <td>Concentration of gases exiting at stack</td> </tr> <tr> <td>1,3-BUTADIENE</td> <td></td> <td></td> <td></td> <td>0.01</td> <td>0.01</td> <td>0.02</td> <td></td> </tr> <tr> <td>2,2,4-TRIMETHYL PENTANE</td> <td></td> <td></td> <td></td> <td>0.01</td> <td>0.01</td> <td>0.02</td> <td></td> </tr> <tr> <td>BENZENE</td> <td></td> <td></td> <td></td> <td>0.01</td> <td>0.01</td> <td>0.04</td> <td></td> </tr> <tr> <td>BIPHENYL</td> <td></td> <td></td> <td></td> <td>92-52-4</td> <td><0.001</td> <td><0.01</td> <td></td> </tr> <tr> <td>CHLORINE</td> <td></td> <td></td> <td></td> <td>7782-50-5</td> <td>0.14</td> <td>0.61</td> <td></td> </tr> <tr> <td>CRESOLS (MIXED ISOMERS)</td> <td></td> <td></td> <td></td> <td>1319-77-3</td> <td><0.001</td> <td><0.01</td> <td></td> </tr> <tr> <td>CUMENE</td> <td></td> <td></td> <td></td> <td>98-82-8</td> <td><0.001</td> <td><0.01</td> <td></td> </tr> <tr> <td>ETHYL BENZENE</td> <td></td> <td></td> <td></td> <td>100-41-4</td> <td>0.004</td> <td>0.01</td> <td></td> </tr> <tr> <td>HEXANE (N)</td> <td></td> <td></td> <td></td> <td>110-54-3</td> <td>0.01</td> <td>0.05</td> <td></td> </tr> <tr> <td>HYDROGEN SULFIDE</td> <td></td> <td></td> <td></td> <td>7783-06-4</td> <td><0.001</td> <td><0.01</td> <td></td> </tr> <tr> <td>METHANOL</td> <td></td> <td></td> <td></td> <td>67-56-1</td> <td>0.01</td> <td>0.04</td> <td></td> </tr> </tbody> </table>								Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates				2004-6		Control Equipment Efficiency		Average (lb/hr)	Max (lb/hr)	Annual (tons/yr)	Permitted Emission Rate (Current)	POLLUTANT				0.07	0.09	0.31	Add, Change, Delete, or Unchanged	PARTICULATE MATTER/PM10				1.51	1.89	6.62	Continuous Compliance Method	TOTAL VOC (INCL. LISTED)				<0.001	<0.001	<0.001	Concentration of gases exiting at stack	1,3-BUTADIENE				0.01	0.01	0.02		2,2,4-TRIMETHYL PENTANE				0.01	0.01	0.02		BENZENE				0.01	0.01	0.04		BIPHENYL				92-52-4	<0.001	<0.01		CHLORINE				7782-50-5	0.14	0.61		CRESOLS (MIXED ISOMERS)				1319-77-3	<0.001	<0.01		CUMENE				98-82-8	<0.001	<0.01		ETHYL BENZENE				100-41-4	0.004	0.01		HEXANE (N)				110-54-3	0.01	0.05		HYDROGEN SULFIDE				7783-06-4	<0.001	<0.01		METHANOL				67-56-1	0.01	0.04	
Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates																																																																																																																																			
2004-6		Control Equipment Efficiency		Average (lb/hr)	Max (lb/hr)	Annual (tons/yr)	Permitted Emission Rate (Current)																																																																																																																															
POLLUTANT				0.07	0.09	0.31	Add, Change, Delete, or Unchanged																																																																																																																															
PARTICULATE MATTER/PM10				1.51	1.89	6.62	Continuous Compliance Method																																																																																																																															
TOTAL VOC (INCL. LISTED)				<0.001	<0.001	<0.001	Concentration of gases exiting at stack																																																																																																																															
1,3-BUTADIENE				0.01	0.01	0.02																																																																																																																																
2,2,4-TRIMETHYL PENTANE				0.01	0.01	0.02																																																																																																																																
BENZENE				0.01	0.01	0.04																																																																																																																																
BIPHENYL				92-52-4	<0.001	<0.01																																																																																																																																
CHLORINE				7782-50-5	0.14	0.61																																																																																																																																
CRESOLS (MIXED ISOMERS)				1319-77-3	<0.001	<0.01																																																																																																																																
CUMENE				98-82-8	<0.001	<0.01																																																																																																																																
ETHYL BENZENE				100-41-4	0.004	0.01																																																																																																																																
HEXANE (N)				110-54-3	0.01	0.05																																																																																																																																
HYDROGEN SULFIDE				7783-06-4	<0.001	<0.01																																																																																																																																
METHANOL				67-56-1	0.01	0.04																																																																																																																																
<p>6/25/2008</p>																																																																																																																																						

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Date of Submittal
March 2008

Emission Point ID No.
(Alternate ID) 2004-6

Tempo Subject Item ID No.
EQT035

Descriptive Name of the Emissions Source (Alt. Name)
CT-600

Approximate Location of Stack or Vent (see instructions)
28, 'GPS-Unspecified'

Fuel	No.	Type of Fuel Used and Heat Input (see instructions)		Heat Input (MMBTU/hr)	Notes	Operating Parameters (include units)	Parameter	Description
		Type of Fuel	Type of Fuel					
								Normal Operating Rate/Throughput Maximum Operating Rate/Throughput Design Capacity/Volume Shell Height (ii) Tank Diameter (ii)
								<input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal

Air Pollutant Specific Information		Proposed Emission Rates						Continuous Compliance Method		
Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Control Equipment Efficiency	Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current)	Add. Change, Delete, or Unchanged	Concentration of gases exiting at stack	
2004-6		1634-04-4 91-20-3 108-95-2 < 0.001 100-42-5 < 0.001 108-88-3 0.02 1330-20-7 0.03		0.00 0.00 < 0.001 < 0.001 0.03 0.03	0.00 0.002 < 0.001 < 0.001 0.03 0.03	0.00 < 0.01 < 0.01 < 0.01 0.10 0.12	0.14	Delete		
METHYL TERT-BUTYL ETHER	NAPHTHALENE	PHENOL	STYRENE	TOLUENE	XYLENE (MIXED ISOMERS)					

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Date of Submittal
March 2008

**Emission Point ID No.
(Alternate ID)** **Descriptive Name of the Emissions Source (Alt. Name)**

New West Plant Cooling Tower

Approximate Location of Stack or Vent (see instructions)

Fuel	Stack and Discharge Physical Characteristics Change? (yes or no)			Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft ³ /min)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point							
	No	Diameter (ft) or Stack Discharge Area (ft ²)						Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	25	25	25	
		ft ²	ft	ft	ft	ft	ft								
EQT244	31.2	31.2	65	31.5	ft/sec	ft ³ /min	0	0	8760	hr/yr	Parameter	25	25	25	
Stack Input (MMBTU/hr) <input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> Heat Input (MMBTU/hr) <input type="checkbox"/> Internal <input type="checkbox"/> External Notes															

Air Pollutant Specific Information

Emission Point ID No. (Alternate ID) 2005-43

Pollutant	Control Equipment Code	HAP/TAP CAS Number	Control Equipment Efficiency	Proposed Emission Rates	Permitted Emission Rate (Current)	Annual (t/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of Gases exiting at stack
PARTICULATE MATTER/PM10	-	-	-	Max (lbs/hr) 0.08	0.27	-	-	-	-
TOTAL VOC (UNCL. LISTED)	-	-	-	Average (lbs/hr) 0.06	0.27	-	-	-	-
1,3-BUTADIENE	-	106-99-0	-	1.34 < 0.001	5.89 < 0.001	- < 0.001	- < 0.001	-	-
2,2,4-TRIMETHYLPENTANE	-	540-84-1	-	0.004 -	0.02 -	- 0.02	- 0.02	-	-
BENZENE	-	71-43-2	-	0.01 -	0.03 -	- 0.03	- 0.03	-	-
BIPHENYL	-	92-52-4	-	< 0.001 -	0.01 -	- 0.01	- 0.01	-	-
CHLORINE	-	7782-50-5	-	0.11 -	0.46 -	- 0.46	- 0.46	-	-
CRESOLS (MIXED ISOMERS)	-	1319-77-3	-	< 0.001 -	< 0.01 -	- < 0.01	- < 0.01	-	-
CUMENE	-	98-82-8	-	< 0.001 -	< 0.01 -	- < 0.01	- < 0.01	-	-
ETHYL BENZENE	-	100-41-4	-	0.003 -	0.003 -	- 0.003	- 0.003	-	-
HEXANE (N)	-	110-54-3	-	0.01 -	0.05 -	- 0.05	- 0.05	-	-
HYDROGEN SULFIDE	-	7783-06-4	-	< 0.001 -	< 0.01 -	- < 0.01	- < 0.01	-	-
METHANOL	-	67-56-1	-	0.01 -	0.04 -	- 0.04	- 0.04	-	-

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Date of Submittal
March 2008

Approximate Location of Stack or Vent (see instructions)

Descriptive Name of the Emissions Source (Alt. Name)
New West Plant Cooling Tower

Emission Point ID No.
(Alternate ID)
2005-43

Tempo Subject Item ID No.
EQT244

Stack and Discharge Physical Characteristics Change? (yes or no)		Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft ³ /min)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point	Datum
Fuel	No.	Height of Stack Above grade (ft)	Stack Gas Exit Temperature (°F)	8760 hr/yr	Jan-Mar	Apr-Jun	NAD27
	31.2	ft	65 ft	31.5 ft/sec	ft ³ /min	0	3321000 mN hundredths
		ft ²			ft ³ /min		hundredths
					°F		

Type of Fuel Used and Heat Input (see instructions)

Heat Input (MMBTU/hr)

Operating Parameters (include units)

Parameter	Description
Normal Operating Rate/Throughput	1.92 MM gal/hr
Maximum Operating Rate/Throughput	1.92 MM gal/hr
Design Capacity/Volume	-
Shell Height (ft)	-
Tank Diameter (ft)	-
<input type="checkbox"/> Fixed Roof	-
<input type="checkbox"/> Floating Roof	-
<input type="checkbox"/> External	-
<input type="checkbox"/> Internal	-

Notes

Air Pollutant Specific Information

Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates	Permitted Emission Rate (Current)	Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
2005-43	Pollutant		Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)			
METHYL TERT-BUTYL ETHER		1634-04-4	0.00	0.00	0.00	Delete		
NAPHTHALENE		91-20-3	0.001	< 0.01	< 0.01			
PHENOL		108-95-2	< 0.001	< 0.01	< 0.01			
STYRENE		100-42-5	< 0.001	< 0.01	< 0.01			
TOLUENE		108-88-3	0.02	0.03	0.09			
XYLYLENE (MIXED ISOMERS)		1330-20-7	0.02	0.03	0.10			

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Date of Submittal
March 2008

Approximate Location of Stack or Vent (see instructions)

Emission Point ID No. (Alternate ID)	Descriptive Name of the Emissions Source (Alt. Name)		Approximate Location of Stack or Vent (see instructions)												
16-77	FCCU #2 Rgenerator		Method	28,"GPS-Unspecified"			Datum	NAD27							
Tempo Subject Item ID No.			UTM Zone	15	Horizontal	751349	mE	Vertical	3320906	mN					
EQT016			Latitude	30	°	0	°	31	°	69	hundredths				
Stack and Discharge Physical Characteristics Change? (yes or no)			Longitude	89	°	56	°	34	°	28	hundredths				
No			Stack Gas Exit Conditions, not at Standard (ft ³ /min)	Stack Gas Flow at Conditions, not at Standard (ft ³ /min)			Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point					
Fuel			ft	200	ft	57.4	ft/sec	475000	ft ³ /min	160	°F	8760	hr/yr		
Type of Fuel Used and Heat Input (see instructions)			Heat Input (MMBtu/hr)	Operating Parameters (include units)											
Type of Fuel				Parameter											
<input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal															
Notes Note that emissions presented below represent post Consent Decree implementation and will become effective upon startup, shutdown, and normal operation of the FCCU Consent Decree Project.															
Air Pollutant Specific Information															
Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates	Continuous Compliance Method			Concentration of gases existing at stack								
16-77	Control Equipment Efficiency	Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)	Permitted Emission Rate (Current)	Add, Delete, or Unchanged								
CARBON MONOXIDE	022	98.00%	21.70	636.80	95.00	95.00									
NITROGEN OXIDES			43.79	144.89	191.78	191.78									
PARTICULATE MATTER/PM10	008	90.00%	54.08	74.60	236.89	276.00	Change								
SULFUR DIOXIDE	002	90.00%	67.40	79.60	295.00	295.00									
TOTAL VOC (INCL LISTED)	022	98.00%	3.10	15.50	13.60	13.60									
1,3-BUTADIENE			106.99-0	0.015	0.067	0.001	Change								
ACETALDEHYDE			75.07-0	0.07	0.09	0.32	0.35	Change							
ACROLEIN			107.02-8	0.006	0.007	0.026	0.026								
AMMONIA	022	98.00%	7664.4-1-7	2.39	2.87	10.46	10.46								
ANTIMONY			7440.36-0	0.002	0.003	0.009	0.240	Change							
ARSENIC			7440.38-2	0.002	0.002	0.009	0.009	Add							
BARIUM			7440.39-3	0.008	0.009	0.033	0.033	Add							
BENZENE			71.43-2	0.03	0.03	0.12	0.10	Change							

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of Submittal
 March 2008

Descriptive Name of the Emissions Source (Alt. Name)

FCCU #2 Regenerator

Emission Point ID No. (Alternate ID)		Approximate Location of Stack or Vent (see instructions)																	
16-77	Tempo Subject Item ID No.	Method	28, "GPS-Unspecified"	Datum	NAD27														
EQT016	Diameter (ft) or Stack Discharge Area (ft ²)	UTM Zone	15	Horizontal	751349	mE:	Vertical	3320906	mN										
No	Height of Stack Above grade (ft)	Latitude	30 °	0'		31 "		69	hundredths										
	Velocity	Longitude	89 °	56'		34 "		28	hundredths										
		Stack Gas Flow at Conditions, not at Standard (ft ³ /min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Stack Gas Exit Temperature (°F)	Date of Construction or Modification	n/a	Jan-Apr-	Oct-Dec										
						Mar-May	Jun	Sep	Oct	Nov	Dec								
						25	25	25	25	25	25								
Fuel		Type of Fuel Used and Heat Input (see instructions)		Operating Parameters (include units)															
		Type of Fuel	Heat Input (MMBTU/hr)	Normal Operating Rate/Throughput	Maximum Operating Rate/Throughput	Design Capacity/Volume													
				Shell Height (ft)	Tank Diameter (ft)														
Notes		Note that emissions presented below represent post Consent Decree implementation and will become effective upon startup, shutdown, and normal operation of the FCCU Consent Decree Project.																	
Air Pollutant Specific Information		Emission Point ID No. (Alternate ID)		Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates		Annual (tons/yr)		Permitted Emission Rate (Current)		Add, Change, Delete, or Unchanged		Continuous Compliance Method		Concentration of gases exiting at stack			
Pollutant	Pollutant			Control Equipment Efficiency	Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)	Permitted Emission Rate (Current)	Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack	Concentration of gases exiting at stack					
BERYLLIUM	BERYLLIUM			7440-41-7	0.001	0.001	0.004	0.004	-	-	-	-	-	-					
CADMUM	CADMUM			7440-43-9	0.001	0.001	0.004	0.004	-	-	-	-	-	-					
CARBON DISULFIDE	CARBON DISULFIDE			75-15-0	0.26	0.31	1.14	0.01	-	-	-	-	-	-					
CHLORINE	CHLORINE			7782-50-5	0.08	0.09	0.34	0.50	-	-	-	-	-	-					
CHROMIUM	CHROMIUM			7440-47-3	0.004	0.005	0.019	0.019	-	-	-	-	-	-					
COBALT COMPOUNDS	COBALT COMPOUNDS			7440-48-4	0.004	0.01	0.02	0.027	-	-	-	-	-	-					
COPPER	COPPER			7440-50-8	0.006	0.007	0.003	0.003	-	-	-	-	-	-					
CYANIDE COMPOUNDS	CYANIDE COMPOUNDS			100-41-4	0.29	0.34	1.26	< 0.01	-	-	-	-	-	-					
ETHYLBENZENE	ETHYLBENZENE			50-00-0	0.04	0.04	0.16	0.16	-	-	-	-	-	-					
FORMALDEHYDE	FORMALDEHYDE			7647-01-0	0.16	0.18	0.68	0.77	-	-	-	-	-	-					
HYDROCHLORIC ACID	HYDROCHLORIC ACID	099	99.00%	00074-90-8	0.04	0.04	0.16	0.48	-	-	-	-	-	-					
HYDROGEN CYANIDE	HYDROGEN CYANIDE	099	99.00%	7783-06-4	0.38	0.90	1.68	1.68	-	-	-	-	-	-					

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Date of Submittal
March 2008

Emission Point ID No. (Alternate ID)		Descriptive Name of the Emissions Source (Alt. Name)		Approximate Location of Stack or Vent (see instructions)			
16-77	Tempo Subject Item ID No.	FCCU #2 Regenerator		Method	28,"GPS-Unspecified"	Datum	NAD ²⁷
EQT016	Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) of Stack Discharge Area (ft ²)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft ³ /min)	Normal Operating Time (hours per year)	Percent of Annual Throughput Through This Emission Point
No	13.25	ft ²	ft	ft/sec	ft ³ /min	°F	Jan Apr Jul Oct Mar Jun Sep Dec
Fuel	Gasoline	13.25	200	57.4	475000	160	25 25 25 25
Type of Fuel Used and Heat Input (see instructions)		Heat Input (MMBtu/hr)		Operating Parameters (include units)		Description	
Type of Fuel	Gasoline	Heat Input (MMBtu/hr)	Normal Operating Rate/Throughput	Fixed Roof	Floating Roof	External	Internal
Notes		Note that emissions presented below represent post Consent Decree implementation and will become effective upon startup, shutdown, and normal operation of the FCCU Consent Decree Project.					
Air Pollutant Specific Information							
Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates	Permitted Emission Rate (Current)	Annual Emission Rate (tons/yr)	Continuous Compliance Method	Concentration of gases exiting at stack
Pollutant	Control Equipment Efficiency	Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)		
LEAD COMPOUNDS	-	7439-92-1	0.02	0.08	0.07	Change	
MANGANESE	-	7439-96-5	0.01	0.01	0.04	Add	
MERCURY	-	7439-97-6	0.001	0.001	0.005	Add	
THYDROCHLORIDE(DICHLOROMETHYL)	-	00075-09-2	0.00	0.00	0.00	Delete	
NAPHTHALENE	-	91-20-3	0.004	0.01	0.02	Change	
NICKEL	-	7440-02-0	0.030	0.035	0.129	Change	
PAH (not otherwise listed)	-	108-95-2	0.046	0.055	0.204	Change	
PHENOL	-	07723-14-0	0.00	0.01	0.02	Change	
PHOSPHORUS	-	7782-49-2	0.009	0.001	0.041	Add	
SELENIUM	-	7664-93-9	2.63	3.68	11.52		
SULFURIC ACID	-	108-88-3	0.01	0.01	0.04	<0.01	
TOLUENE	-	1330-20-7	0.07	0.08	0.28	0.08	
XYLENE (MIXED ISOMERS)	-						

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Emission Point ID No.
(Alternate ID)

94-8

Tempo Subject Item ID No.

Descriptive Name of the Emissions Source (Alt. Name)

Marine Vapor Recovery (MVR) Thermal Oxidizer

Emission Point ID No.

Marine Vapor Recovery (MVR) Thermal Oxidizer

Approximate Location of Stack or Vent (see instructions)

Fuel		Type of Fuel Used and Heat Input (see instructions)		Heat Input (MMBTU/hr)		Notes	<input type="checkbox"/> Fixed Roof	<input type="checkbox"/> Floating Roof	<input type="checkbox"/> External	<input type="checkbox"/> Internal	Description
No.	Type of Fuel	#	ft ²	ft	ft/sec						
No											

Air Pollutant Specific Information

Emission Point ID No. (Alternate ID)

94-8

Pollutant	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates	Permitted Emission Rate (Current)	Annual (tons/yr)	Continuous Compliance Method	Concentration of gases exiting at stack
CARBON MONOXIDE	-	-	Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	-	-
NITROGEN OXIDES	-	-	16.50	19.80	72.10	0.00	Change
PARTICULATE MATTER/PM10	-	-	19.60	23.50	86.00	0.00	Change
SULFUR DIOXIDE	-	-	1.50	1.80	6.50	0.00	Change
TOTAL VOC (INCL. LISTED)	-	-	1.10	3.30	4.90	0.00	Change
BENZENE	71-43-2	0.14	1.10	0.63	0.00	Change	
BIPHENYL	92-52-4	<0.001	<0.001	<0.01	0.00	Change	
CRESOLS (MIXED ISOMERS)	1319-77-3	<0.001	<0.001	<0.01	0.00	Change	
CUMENE	98-82-8	0.02	0.20	0.08	0.00	Change	
ETHYLBENZENE	100-41-4	0.07	0.69	0.29	0.00	Change	
HEXANE (-N)	110-54-3	1.10	7.70	4.70	0.00	Change	
HYDROGEN SULFIDE	7783-06-4	0.22	0.95	0.96	0.00	Change	
METHYL TERT-BUTYL ETHER	1634-04-4	0.00	0.00	0.00	0.00	Dilute	

6/25/2008

Date of Submittal
March 2008

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Date of Submittal
March 2008

Descriptive Name of the Emissions Source (Alt. Name)

Marine Vapor Recovery (MVR) Thermal Oxidizer

Emission Point ID No. (Alternate ID)		Approximate Location of Stack or Vent (see instructions)									
94-8		<p>Method</p> <p>UTM Zone 15 Horizontal 794898.91 mE Vertical 3323697.9 mN</p> <p>Latitude 30 ° 0 ' 31 "</p> <p>Longitude 89 ° 56 ' 34 "</p> <p>Percent of Annual Throughput Through This Emission Point</p> <p>Date of Construction or Modification post 6/11/73</p> <p>Jan Apr Jul Oct</p> <p>Mar Jun Sep Dec</p>									
Tempo Subject Item ID No.		<p>Diameter (ft) or Stack Discharge Area (ft²)</p> <p>Height of Stack Above grade (ft)</p> <p>Stack Gas Exit Velocity</p> <p>Stack Gas Flow at Conditions, not at Standard (ft³/min)</p> <p>Stack Gas Exit Temperature (°F)</p>									
EQT00350		<p>12 ft</p> <p>ft² 70 ft</p> <p>ft 21.3 ft/sec</p> <p>144597 ft³/min</p> <p>890 °F</p>									
Stack and Discharge Physical Characteristics Change? (yes or no)		<p>Normal Operating Time (hours per year)</p> <p>Normal Operating Rate/Throughput</p> <p>Maximum Operating Rate/Throughput</p> <p>Design Capacity/Volume</p> <p>Shell Height (ft)</p> <p>Tank Diameter (ft)</p>									
No											
Fuel		<p>Type of Fuel Used and Heat Input (see instructions)</p> <p>Heat Input (MMBTU/hr)</p> <p>Type of Fuel</p> <p>Notes</p>									
		<p><input checked="" type="checkbox"/> Fixed Roof</p> <p><input type="checkbox"/> Floating Roof</p> <p>External</p> <p>Internal</p>									
		<p>Permitted Emission Rate (Current)</p> <p>Annual (tons/yr)</p> <p>Add, Change, Delete, or Unchanged</p> <p>Continuous Compliance Method</p> <p>Concentration of Gases exiting at stack</p>									
Air Pollutant Specific Information		<p>Emmission Point ID No. (Alternate ID)</p> <p>Control Equipment Code</p> <p>HAP/TAP CAS Number</p> <p>Control Equipment Efficiency</p> <p>Proposed Emission Rates</p>									
94-8		<p>Pollutant</p> <p>NAPHTHALENE</p> <p>TOLUENE</p> <p>XYLENE (MIXED ISOMERS)</p> <p>Average (lbs/hr)</p> <p>Max (lbs/hr)</p> <p>Annual (tons/yr)</p>									
		<p>< 0.001</p> <p>< 0.001</p> <p>0.24</p> <p>1.50</p> <p>< 0.01</p> <p>1.00</p> <p>0.35</p> <p>0.00</p>									
		<p>Change</p> <p>Change</p> <p>Change</p> <p>Change</p> <p>Change</p> <p>Change</p> <p>Change</p> <p>Change</p>									

**State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants**

Date of Submittal
March 2008

Descriptive Name of the Emissions Source (Alt. Name)

Flare #4

**Emission Point ID No.
(Alternate ID)**

2004-5B

Tempo Subject Item ID No.

EQ10360

Approximate Location of Stack or Vent (see instructions)

Method	28,"GPS-Unspecified"			Date	NAD83
U/T/M Zone	15	Horizontal	751630	mE	Vertical
Latitude	"	"	"	"	mN
Longitude	"	"	"	"	hundredths
Stack Gas Flow at Standard (ft ³ /min)	ft^3/min	Stack Gas Exit Conditions, not at Standard (°F)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Percent of Annual Throughput Through This Emission Point
No	2 ft ²	381 ft	65.6 ft/sec	8760 hr/yr	Construction or Modification
Fuel	Type of Fuel	Heat Input (MMBTU/hr)	Operating Parameters (include units)	Parameter	Description
a	Hydrogen. Off Gas. CCR	0.00	6.00 MM BTU/hr		
Notes					
Flare #4 was previously included in Source ID 2004-5 with Flare Tip #3. This application is proposing to breakout each Flare tip to its own Source ID. Emissions included in FLARE CAP					
Air Pollutant Specific Information					
Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP CAS Number	Proposed Emission Rates		Permitted Emission Rate (Current)
2004-5-B			Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)
Pollutant					
CARBON MONOXIDE				28.05	Unchanged
NITROGEN OXIDES				12.95	Unchanged
PARTICULATE MATTER/PM10				0.17	Unchanged
SULFUR DIOXIDE				25.00	Unchanged
TOTAL VOC (INCL. LISTED)				4.74	Unchanged
Continuous Compliance Method					
Concentration of gases existing at stack					

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of Submittal
 March 2008

Emission Point ID No.
 (Alternate ID)
 20-74

Descriptive Name of the Emissions Source (Alt. Name)
 West Plant Separator-API

Approximate Location of Stack or Vent (see instructions)						Datum			
						3323658.0 mN 70 hundredths 57 hundredths			
						Vertical			
						31 "			
						34 "			
						34 "			
						Percent of Annual Throughput Through This Emission Point			
						Construction or Modification			
						Date of Modification pre 5/4/87			
						Jan Apr Jun Sep Oct Dec			
						Mar May Jun Jul Aug Sep Oct Nov Dec			
						25 25 25 25 25 25 25			
Method									
UTM Zone 15						Horizontal 794891.13 mF			
Latitude 30 °						0 "			
Longitude 89 °						56 "			
Stack Gas Exit Conditions, not at Standard (ft ³ /min)						Normal Operating Time (hours per year)			
Stack Gas Exit Velocity (ft/sec)						Normal Temperature (°F)			
Stack Gas Exit Velocity (ft/sec)						Stack Gas Exit Temperature (°F)			
Diameter (ft) or Stack Discharge Area (ft ²)						ft ³ /min			
Height of Stack Above grade (ft)						°F			
ft ft ²						8670 hr/yr			
Type of Fuel Used and Heat Input (see instructions)						Operating Parameters (include units)			
Fuel Type of Fuel						Parameter			
Heat Input (MMBtu/hr)						Description			
						Normal Operating Rate/Throughput 125,000.00 gal/hr			
						Maximum Operating Rate/Throughput 150,000.00 gal/hr			
Design Capacity/Volume									
Shell Height (ft)									
Tank Diameter (ft)									
						<input type="checkbox"/> Fixed Roof <input type="checkbox"/> Floating Roof <input type="checkbox"/> External <input type="checkbox"/> Internal			
Notes									
Separator is gas-tight covered.									
Air Pollutant Specific Information									
Emission Point ID No. (Alternate ID) 20-74									
Pollutant	Control Equipment Code	IAP/TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Annual (tons/yr)	Continuous Compliance Method	Concentration of gases exiting at stack
TOTAL VOC (INCL LISTED)			Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)				
BENZENE		99.00%	0.00	0.00	0.00	1.10		Delete	
BIPHENYL		99.00%	71-43-2	0.00	0.00	0.01		Delete	
CRESOLS (MIXED ISOMERS)		99.00%	92-52-4	0.00	0.00	0.01		Delete	
CUMENE		99.00%	131-97-3	0.00	0.00	<0.01		Delete	
ETHYLBENZENE		99.00%	98-82-8	0.00	0.00	0.01		Delete	
HEXANE (N)		99.00%	100-41-4	0.00	0.00	0.01		Delete	
HYDROGEN SULFIDE		99.00%	110-54-3	0.00	0.00	0.03		Delete	
METHANOL		99.00%	7783-06-4	0.00	0.00	0.04		Delete	
METHYL TERP-BUTYL ETHER		99.00%	67-56-1	0.00	0.00	0.01		Delete	
NAPHTHALENE		99.00%	1634-04-4	0.00	0.00	0.02		Delete	
TOLUENE		99.00%	91-20-3	0.00	0.00	0.01		Delete	
XYLIENE (MIXED ISOMERS)		99.00%	108-88-3	0.00	0.00	0.01		Delete	
		99.00%	1330-20-7	0.00	0.00	0.01		Delete	

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of Submitat
 March 2008

Emission Point ID No.
 (Alternate ID)
 WW TU

Tempo Subject Item ID No.
 .

Descriptive Name of the Emissions Source (Alt. Name)

Wastewater Treatment Unit

		Approximate Location of Stack or Vent (see instructions)								
		Method	UTM Zone	Horizontal	mE	Vertical	mN			
		Latitude	0	"	"	"	hundredths			
		Longitude	0	"	"	"	hundredths			
				Stack Gas Flow at Conditions not at Standard (ft ³ /min)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
				ft ³ /min	°F	2008	Jan Apr Jul Oct Dec			
				ft/sec	°F	8760 hr/yr	Mar Jun Sep			
				Operating Parameters (include units)						
		Type of Fuel Used and Heat Input (see instructions)	Type of Fuel	Heat Input (MMBTU/hr)	Parameter			Description		
No					Normal Operating Rate/Throughput	1,480,090,000.00 Gal/yr				
					Maximum Operating Rate/Throughput					
					Design Capacity/Volume					
					Shell Height (ft)					
					Tank Diameter (ft)					
						<input type="checkbox"/>	Floating Roof	<input type="checkbox"/>	External	
						<input type="checkbox"/>	Fixed Roof	<input type="checkbox"/>	Internal	
Air Pollutant Specific Information		Proposed Emission Rates						Permitted Emission Rates		
Emission Point ID No. (Alternate ID)	Control Equipment Code	HAP/TAP	CAS Number	Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current)	Annual (tons/yr)	Continuous Compliance Method	
WW TU	Pollutant	PHENOL	108-95-2	0.06	0.005	0.28	Add	Add	Add	
		STYRENE	100-42-5	0.005		0.02				
		TOLUENE	108-88-3	0.28		1.22				
		XYLENE (MIXED ISOMERS)	1330-20-7	2.15		9.43				

Includes emissions from WW sources previously permitted as EPN's 17-74, 20-74, 19-74, 96-7, 98-100, 98-101, 98-102, and 98-103.